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ANNUAL REPORT

FOR

1881 AND 1882,

DEPARTMENT OF EDUCATION,

ARIZONA TERRITORY.

M. H. SHERMAN,

SUPERINTENDENT.

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OFFICE OF SUP'T. PUBLIC INSTRUCTION,
PRESCOTT, January 25, 1883.

To the Hon. BOARD OF EDUCATION of the Territory of Arizona:

GENTLEMEN: I herewith submit my Annual Report of Public Instruction for the years 1881 and 1882

I am

Very respectfully, your obedient servant,

M. H. SHERMAN,

Superintendent of Public Instruction.

ANNUAL REPORT

OF THE

SUPERINTENDENT OF PUBLIC INSTRUCTION OF ARIZONA FOR 1881.

The year just closed is memorable for the inauguration of general prosperity and for the development of an abiding confidence in a great future for Arizona.

Our system of public schools, so freely sustained by the suffrages of the people, gives fair promise of expanding its benefits immeasurably, through the growth in wealth and population which will afford better opportunities for its successful operation.

Prominent among the causes which prevent best results are sparsely settled rural districts, short school terms, and small but costly schools

These difficulties will find solution largely in growth, under the influence of a wisely administered system of school supervision.

A condensed statement from the reports of County Superintendents, so far as they have reported to this office, would fall far short of showing the actual condition of schools within the Territory

These reports, so far as received, are herewith submitted. They show, as will be seen, for the most part, but a meagre array of figures, which by no means represents the flourishing condition of many schools in the Territory, and the deep interest taken in education by the people.

This is not the fault of the County Superintendents, but of the system under which they are compelled to act The law makes the County Superintendents *ex officio* appendages to other important and responsible county offices, which confine the incumbent to his place of business and to a routine of duties, thus rendering the personal supervision of schools impossible The County Superintendent can only collect and report such information as he may receive from reports made to him by the trustees of the different school districts in his county; his salary is so small that in the large counties it is almost impossible for him to perform the duties as required by law. There is generally throughout the Territory a deep interest felt in education itself, and laudable efforts made to maintain good schools, as is evident to all who are acquainted with the different localities, but the importance and necessity of making, promptly and punctually, accurate and full reports does not seem to be so fully appreciated; indeed it may be said that, in this matter, there is a sad degree of negligence and failure. This, and the incompatibility of the superintendency of schools with the many other duties enjoined by law upon the same officer, give to the reports of County Superintendents the appearance of barrenness of perfunctory performance.

THE SHORT TERM.

In our report for 1879 and 1880 we mentioned this same matter. It is the weak point in our schools.

In a recent school report I find the following remarks, that apply well to schools of Arizona:

"A school term of only three months in the year, no matter how accomplished the teacher, nor how bright the pupils may be, is wasteful parsimony. If it were economic of dollars and cents it might be thought to have a redeeming feature with a people struggling with the privations of pioneer life; but it is positively wasteful to spend money in a way that does not accomplish one-fourth as much as would twice the amount wisely expended. In other words, doubling the length of the term would quadruple its benefits, while the cost would not be nearly doubled What would be thought of feeding a child with nutritious food three months and then abandon it to husks, filth and starvation for the rest of the year? Could a strong, healthy body be developed by such treatment? Neither can a hungry mind be nourished, trained and developed by such illiberal allowances of culture. We may build school-houses and employ teachers, and expend our hard-earned money on schools, but unless we can double the three months' term our expenditure will prove wasteful and our ill-devised efforts almost farcical.

"I think it but just and proper that an imperative prohibition should be placed upon the present short term in vogue in many districts, by making the minimum five months. If some districts should fail to support a school this long—few or none would fail—the money would not be wasted, but would help other districts to accomplish some good."

TEACHERS' WAGES.

The decrease in teachers' wages during the past year has been about seven per cent As we are now evidently on the rising wave of prosperity it is not probable that a further decrease will be made. It is curious to observe that while men's wages have decreased nine per cent. women's wages have decreased but five per cent

I am glad to record the fact that the people of the Territory give a very general assent to the doctrine that wages should be fixed by the amount or period of labor, not by the sex of the laborer.

LAND GRANT.

In my report for 1879 and 1880 this matter was also mentioned.

Our schools must be supported by taxation in the future as in the past. While our neighbors on the east have a school fund amounting to millions arising from the sale and lease of land given them by the general government, without some additional legislation by Congress our fund from the same source will not greatly lessen our school taxes.

SCHOOL FUNDS.

According to the School Law of Arizona the revenue for the support of schools is divided into two separate funds—first the Territorial School Fund, of fifteen cents tax on each one hundred dollars valuation of property This fund is under the control of the Territorial Board of Education The Board of Education meets three time each year and apportions the Territorial School Fund to the different couties, according to the number of children of school age, as shown by a school census taken every two years

The second fund is that of the County School Fund. This is fifty cents on each one hundred dollars of taxable property in each county This fund is more especially under the control of the County Superintendent of Schools Each quarter in the year the County Treasurer reports to the County Superintendent of Schools the amount of money in the County School Fund, and the County Superintendent at once apportions this money, in connection with the Territorial money, to the credit of said county to the different school districts of the county This apportionment is made according to the average attendance of persons of school age during the three months immediately preceding said apportionment.

The following is the first apportionment of school moneys from the Territorial Fund

Yavapai County		$409 95
Yuma	"	273 60
Mohave	"	77 40
Maricopa	"	343 80
Pima	"	600 75
Apache	"	279 45
Pinal	"	270 45
		$2,255 40

This apportionment was made April 8, 1881 The amount allowed each child was forty-five cents.

In May, 1881, a census was taken in the new counties of Gila and Cochise, so that in the second apportionment for this year they were allowed school money with the other counties, as follows.

Yavapai County		$337 07
Yuma	"	224 96
Mohave	"	63 64
Maricopa	"	241 61
Pima	"	223 85
Graham	"	129 50
Cochise	"	278 61
Pinal	"	93 24
Apache	"	229 77
Gila	"	129 13
		$1,953 38

Thus, for the year 1881, the whole amount of school money apportioned to the different counties was $4,208.78, to which add the salary of the Superintendent of Public Instruction, $2,000, gives a total of $6208 78

COUNTY SCHOOL FUND

The reports of County School Superintendents show the following:

		Receipts	Disbursements
Yavapai County		$9,783 71	$8,559 73
Yuma	"	2,331 76	1,504 17
Mohave	"	3,462 85	2,189 80
Maricopa	"	6,229 83	5,139 54
Pima	"	15,773 31	10,145 45
Graham	"	1,217 80	1,112 18
Pinal	"	8,718 14	7,104 95
Apache	"	2,533 80	2,413 88
Gila	"	2,508 22	249 25
Cochise	"		
Total		$52,559 42	$38,418 95

Amount on hand at the commencement of the year 1882, $14,140.47.

Whole number of persons of school age in Arizona, as shown by last school census, five thousand and three hundred, 5,300.

Whole number of persons of school age reported as attending, three thousand eight hundred and forty-four (3,844).

Whole number of teachers employed in the public schools of Arizona, one hundred and two (102).

ANNUAL REPORT

OF THE

SUPERINTENDENT OF PUBLIC INSTRUCTION OF ARIZONA FOR 1882.

To the Honorable Board of Education:

GENTLEMEN:—After nine years of educational work in Arizona I come to you with my last Annual Report as Superintendent of Instruction.

I have added to the end of this report tabulated statements, showing the receipts and disbursements of the school moneys in the different counties as well as the number of children attending school, and the names of the different teachers

My work as Superintendent has been very onerous, attended with many cares and responsibilities; and now that it is ended I feel safe in saying that our schools are established on a firm safe basis, and will continue to advance and become the pride of our Territory.

It is needless to add, in conclusion, that in severing my connection with the schools, I do so with regret The success of our school system is a matter most earnestly desired and hoped for, and I shall always watch with eager interest and pleasure every step forward in its progress.

SCHOOL LAW.

As the labors of many of the school officers are gratuitous, it naturally follows that time devoted to educational matters must necessarily be limited. In a new country like ours, where settlements are scattered, it is useless to look for that encouragement in educational matters that we find in the more thickly settled States Still, with the many obstacles to be encountered in a Territory like ours, we have made good progress in the last year

TERRITORIAL SUPERINTENDENT.

While the law directs the Territorial Superintendent to visit the schools of the Territory, and exercise a general supervision of the public schools of this Territory, there is not sufficient appropriation by the Legislature to enable him to do his work effectively.

The Territory is so large and the schools so scattered that the task is one requiring a great deal of time, labor and expense. His reports must be made up from reports sent him by the County Superintendents, and the latter have to get their information from local district officers

In many of the counties the Superietendents have failed to get correct reports from the local officers, and we would suggest some amendment to our present school law, so that local and county officers should be compelled to use more promptness in furnishing the necessary data to the Territorial Superintendent

TERRITORIAL SCHOOL FUND.

While our general school law provides that a tax of fifteen cents upon each hundred dollars value of taxable property be levied, collected and paid into the Territorial treasury for school purposes, we have no fund to aid us in establishing a University. I have, by and with the consent of his Excellency Gov. F. A. Trible, made a selection of certain tracts of land now unoccupied, for University purposes. I herewith submit to you the selections, and the correspondence on the subject.

COUNTY SUPERINTENDENTS.

I have no hesitation in saying that the system of County Superintendency in our counties is radically wrong The Probate Judge is *ex-officio* County Superintendent of Schools for his county. Inasmuch as his time is constantly taken up with matters pertaining to his office as Probate Judge, he has no opportunity of visiting schools. Besides, the office of County Superintendent should be filled by a man specially qualified and trained for that business We might as well expect a County Recorder to fill the office of District Attorney. I am not unmindful of the fact that in several counties we have good intelligent men who are filling the office of County Superintendent in a faithful manner, and are doing all in their power to advance school interests. I would suggest an amendment to the present law, so that the office of County Superintendent should be a distinct one. The salary should be sufficient to induce good and competent men to seek the position. No timid and nervous apprehensions as to caste should be allowed to interfere with the inalienable rights of our children to a suitable education. While we spend thousands of dollars annually in our Territory to defray the expenses of grand and petit juries, magistrates and peace officers, in order that crimes may be suppressed, would it not be well to consider that most potent factor in the prevention of crime—the education of our youth? Under the present system our schools must necessarily languish for want of a proper supervision.

TEXT BOOKS.

During the year 1882 the Territorial Board of Education adopted a uniform series of text books. Heretofore, in some districts, there were often as many as three or four different kinds of readers This made the labor of the teacher much harder and the number of classes greater. By the use of a uniform series of text books parents have the benefit of reduced rates, and the same books can be used in other districts in case of removal. In nearly every district in the Territory a cheap, uniform set of books is now in use.

TEACHERS.

It is to be feared that the most judicious care has not been used in the selection of teachers Our examiners in the different counties receive no compensation for their services as such. The result is, that very little interest is taken in the matter, and it is too often the case that certificates are obtained without a rigid examination. If the examiners were allowed a small compensation, of say at least two dollars per day, we would find more interest taken in this branch of our school matters.

SCHOOL-HOUSES.

Considerable progress has been made in many of the counties in the erection of good school buildings. Much of the expense incurred has fallen on those directly interested. Under our method of apportioning school money the bulk of it goes into the large towns, and the outside districts seldom have enough to keep their schools going for more than three or four months in the year. I would suggest that the Territorial school money to which each county is entitled be divided equally among all the districts. This plan would aid very materially the outside districts, and would work no injury on the schools in the towns and villages In nearly every town of any importance in the Territory, such as Globe and Tucson, there is abundance of school money, far more than will be required for school purposes for the present year Such an amendment, changing the manner of apportioning the Territorial school funds, would work no hardship on populous towns, and would build up the outside districts

Attention is respectfully invited to the remarks, suggestions and recommendations of County Superintendents and Principals of schools, and to Exhibits "A," "B," "C" and "D" hereto appended, bearing upon school matters

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In January, 1882, the following list of printed questions was furnished by the Superintendent of Instruction to each of the County Boards of Examiners:

PRELIMINARY QUESTIONS AND DIRECTIONS FOR APPLICANTS.

1. Write your name, age, and post office address
2. How many terms have you taught?
3. How many Institutes have you attended?
4. Number your answers to correspond with the questions, and give due attention to the use of capitals and punctuation.
5. No communication nor reference to books or memoranda is permitted during the examination Write carefully Spell correctly
6. An applicant who is a stranger to the County Superintendent must furnish satisfactory evidence that he possesses a good moral character.

Geography.

1. Give evidence of the rotundity of the earth.
2. Account for the changes of seasons
3. In what season is Christmas at Cape Colony?
4. Which of the European capitals is nearest the latitude of Denver?
5. How wide is the equator?
6. Mention and locate the two most extensive mountain systems on the globe, two most extensive river systems
7. Bound the State in the United States having the largest area, the State having the smallest area; the most populous State
8. Describe the physical features of the same States.
9. Bound Arizona; give its area, physical features.
10. Name the principal products of Arizona, also two of its leading exports and three of its imports

Other Natural Sciences.

1. Name the great groups into which the animal kingdom is divided
2. Give the five classes into which the vertebrates are divided.
3. Define the term physics.
4. Define specific gravity.
5. What are the constituent elements of air? Which is essential to animal life?
6. What is the most abundant chemical element in nature?
7. Into what two classes are the chemical elements divided?
8. What is meant by the "planetary system?"
9. Name the "interior planets," i e, those whose orbit is within the earth's orbit.
10. Name the planets which have satellites

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Grammar.

1. Write a sentence containing all parts of speech.
2. Write two simple sentences; combine them into a complex; then into a compound sentence.
3. Give a synopsis of the verb *swing* in all the modes and tenses of the active voice; first person singular number.
4. How does analysis differ from parsing?
5, 6, 7, 8, 9, 10. Analyze fully and parse the italicised words:

Ah, *well* for us *all* some sweet hope lies
Deeply buried from human eyes:
And in the *hereafter* angels may
Roll the stone *from its* grave *away*.

Botany.

1. Name and describe all the parts of a plant.
2. Name and describe all the parts of a flower.
3. Name the organs of growth, and those of reproduction
4. Give an example of an annual, biennial and perennial.
5. Mention ten valuable products derived from the vegetable kingdom in the United States.

Theory and Practice.

1. What educational publications do you read regularly, and what benefits are derived from such reading?
2. State your method of teaching reading to beginners.
3. Do you think it profitable for teachers to prepare carefully for each recitation? What is your practice?
4. Is the acquisition of knowledge or mental discipline the chief object of education? Why?
5. How many terms and what grades of school have you taught? What is your motive in becoming a teacher?
6. How do you provide for the ventilation of your school room?
7. Would you have a programme of the daily exercises placed where all can see it?
8. After a pupil has been detected in mischief and punished how should he be treated?
9. Should a teacher ever make remarks in the presence of his pupils reflecting on their parents?
10. Why should every teacher be free from bad habits, and his life pure?

Arithmetic.

1. Express in Roman and Arabic notations one million sixty-eight thousand five hundred sixty-five.
2 875+769. Solve and explain as to a child.
3. 6-7+4-5. Solve and demonstrate.
4. 7-9÷4-5. Solve and demonstrate
5. Divide one million by one-millionth, and explain.
6. What do you understand by the "Metric System," and what advantages are claimed for it?
7. Define compound numbers; per centage; interest; discount; commission.
8. What is the amount of $1,344 from April 9, 1870 to September 5, 1871, at seven per cent. per annum?
9. When gold is at a premium of thirty per cent. what is the discount on greenbacks?
10. What is the largest square stick of timber that can be sawed from a log thirty-six inches in diameter?

United States History and Constitution.

[Time, forty minutes]

1. What permanent settlements were made within the present limits of the United States by the English, Spanish and Dutch prior to the year 1621?
2. What was the purpose of the "Articles of Confederation," and when adopted?
3. Which of the original States first adopted the Constitution of 1787, and which last?
4 What State was first added to the original thirteen, and in whose administration was it admitted?
5. Name the first Vice-President, and give some account of his life
6 Name the Presidents who have been re-elected.
7. Give the qualifications of Senators and Representatives in Congress
8. Name in their order the steps through which a bill for raising revenue must pass to become a law.
9. What do you understand by "Original jurisdiction ?"

Reading.

1. What is inflection?
2. What is emphasis?
3 What is modulation?
4. Why do you hear a reading class read?
5. What is your method of conducting a recitation in reading?
6. 7th, 8th, 9th, 10th. Selections to be read (Independent Sixth Reader.) First—From "Nature's Teaching," page [illegible]. Second From "The Haunted House," page 368.

Physiology and Laws of Health

1. Define anatomy; comparative anatomy; physiology, comparative physiology; hygiene.
2. Describe the changes to which the food is subjected in the process of digestion.
3. Describe the circulation of the blood, beginning with arterial blood as it leaves the heart.
4. Name and describe the principal organs of respiration.
5. Is it proper to compress the chest?

Orthography.

1. What is a letter?
2. How many elementary sounds in the English language?
3 What is spelling?
4. Should the ear or the eye be trained to judge of spelling?
5. Syllabify the following words, and mark the accented syllable; inquiry, comtemplate, irreparable.
6. 7th 8th. Spell correctly. Shampain, preperation, renovate, ceseed, traveler, moneys, willful, changeable, wagon, fagot, parallell, receive, resusitate, superceed, revery, separate, menazhery. 9th and 10th will be marked by the spelling in all your papers.

Course of Study for the Public Schools of the Territory of Arizona, Prepared under the direction of the Territorial Board of Education, by M. H. Sherman, Territorial Superintendent of Public Schools. Prescott, 1882.

INTRODUCTION.

This manual containing the course of study prescribed by the Board of Education for the schools of Arizona, with accompanying suggestions, etc., is now placed before the teachers of the Territory, to serve as a guide, and to help them in their arduous perplexing labors incidental to the teacher's profession. While it is not intended to be, like the laws of the Medes and Persians, fixed and inflexible in character, still it is believed that in the same proportion as its directions and suggestions are carried out, in "letter and spirit," will the work of the teacher be rendered easy and satisfactory, and the task of the pupil pleasant and profitable; and, further, which is highly desirable, that the educational work of the Territory will be harmonized and greatly enhanced in value.

The time, in years, assigned for the completion of the course of study is based on the supposition that the school year consists of ten months, and that the attendance of the pupil is regular When the school year consists of less than ten months, or the attendance of the pupil is irregular, the time for the completion of the course must, at the discretion of the teacher, be proportionately extended. It is possible that the circumstances of some particular school may require a slight deviation from the prescribed course. These cases should be strictly exceptional, and, to be properly met, will require great discretion and sound judgment on the part of the teacher.

In preparing this course, it has not been the intention of the Board of Education to restrain, in the least, the originality or inventive genius of the teacher; on the contrary, let every teacher be constantly on the alert for new and better forms of presentation and methods of illustration of every subject and study. From the hearty co-operation of wide awake, intelligent, progressive teachers in our educational work, can we alone hope to see the schools of our Territory placed in the front rank as to the quality and quantity of work done.

J. C. FREMONT,
T. J. BUTLER,
M. H. SHERMAN,
Territorial Board of Education, of Arizona

COURSE OF STUDY OF THE PUBLIC SCHOOLS OF ARIZONA.

Fifth Grade—One year and a half or three Terms.

FIFTH GRADE.—FIRST TERM.

Reading.—Teach the pupil to recognize words at sight from Appleton's Charts, from word cards, and words printed on the board by the teacher.

Spelling.—Spell by sound first, afterwards by letter, all words learned by sight in reading lessons.

Arithmetic—Thorough knowledge of numbers from 1 to 10 developed by the Grube system, making all possible combinations, no result, or number used, to exceed 10 Let the pupil handle the objects for himself as far as possible. Roman numerals to twenty.

Language—Encourage the pupil to free expression of thought To this end, cultivate the perceptive faculties Teach a child *how to see and observe* and there will be no trouble in inducing him to talk

Writing—Teach thoroughly, slanting straight lines, right curve, and left curve; give special attention to proper position of the hand and body. Follow the suggestions given under head of writing

Oral Instruction—Colors, primary and secondary Use color charts, color cards, flowers, pieces of ribbon, etc. Encourage the children to furnish specimens of color from any common articles found at home Talks on politeness; allowing the children to talk about any instances of politeness they have noticed in others

FIFTH GRADE.—SECOND TERM.

Reading.—Appleton's First Reader to Part Second, by Word and Phonic Method. Require the pupil to read each lesson backwards *fluently*, as a test of his knowledge of the words at sight, before attempting to read forward Teach the name and use of the period, interrogation point, and exclamation point

Spelling—All words contained in reading lessons, by sound, and by letter, orally. First five exercises in Webster's Elementary Speller to be used as phonic drill.

Arithmetic—Numbers from 10 to 20, by Grube system. Roman numerals to fifty.

Language—Continue work of first term.

Geography—Teach the principal points of the compass The pupil should be able to tell, without hesitation, what direction any object in his school room is, from any other object.

Writing.—Teach the thirteen short letters in the following order. i, u, w, r, n, m, x, b, o, a, e, c. s, and combine them into easy words

Oral Instruction—Teach the forms, square, round and triangular, so that pupils may readily recognize and describe any object as possessing these forms, or modifications of them. Talks on politeness continued

Drawing—Krusi's Card Series, No 1. Special attention to position of the hand and pencil, follow directions on printed slip which accompanies cards

FIFTH GRADE.—THIRD TERM.

Reading.—Complete Appleton's First Reader, pursuing the same general plan of instruction as in first and second term.

Spelling—Teach all the words contained in reading lesson; to be spelled orally, by sound and by letter, and in writing from dictation, on slate or paper Exercises 6, 7, 8, 9, and 10 in Webster's Elementary Speller to be used in phonic drill.

Leigh's Phonetic Method recommended for use of teacher.

Arithmetic—Continue Grube Method through twenty-five. Roman numerals to one hundred.

Language—Train the pupil to answer all questions in complete sentences. Carefully and persistently correct all common errors in speech, without giving any reason for the correction

Geography—Lead the pupil gradually from the Geography of his school room, to that of his school yard, play ground, and surrounding country.

Writing—All the small letters singly, and in easy combinations Special attention to spacing.

Oral Instruction—Review both form and color in daily talks, about something familiar in dress, furniture, food, animals, etc Moral stories told by the teacher and repeated by the children

Drawing—Krusi's Card Series, No 2.

Fourth Grade—One year.

FOURTH GRADE.—FIRST TERM.

Reading.—Appleton's Second Reader to lesson XXXVII. General plan of the book to be followed. Daily drill in phonetic exercises for securing distinct articulation.

Spelling.—Spell from dictation, orally and in writing all words occurring in reading lessons. Phonic drill, using exercises 11, 12 and 13, from Webster's Elementary Speller.

Arithmetic.—Appleton's Primary Arithmetic, to lesson LVI (fifty six.)

Language.—Let the pupil construct and write sentences about the most common things, and develop thought by easy conversations with the children about these things. Teach them to begin written sentences with a capital and end them with a period or interrogation point as the sense may require. No set definitions or rules to be learned. Daily criticism of oral and written sentences, as a class exercise. Stickney's Child's Book of Language to be introduced. Let one exercise serve as the basis of language lessons for one week. With the book in the hands of the pupil, lead the class to talk freely about the picture. After the pupil *knows something to write about the picture*, and has been taught how to write it correctly by daily efforts and corrections in class, let new pictures be presented and the same process repeated.

Geography.—Oral lessons given by the teacher from Appleton's Elementary Geography, from lesson I, on page 19, to lesson XXXIII, on page 45.

Writing.—Primary Model Copy Book, No. 1.

Oral Instruction.—Child's own body; names and uses of the different parts. Main points of difference between these parts and the corresponding parts of animals. Frequent talks on morals and manners. Cowdery's Moral lessons recommended for use by the teacher.

Drawing.—Krusi's Card Series, No. 3.

FOURTH GRADE—SECOND TERM.

Reading.—Complete Appleton's Second Reader from lesson XXXVIII on page 68. Names and uses of all the common marks of punctuation to be explained to the pupil. Follow the plan laid down in reader.

Spelling.—Spell from dictation, orally and in writing, all words contained in reading lessons Exercises 14, 15 and 16, from Webster's Elementary Speller for Phonic drill.

Arithmetic.—Appleton's Primary Arithmetic completed. The mental exercises to be supplemented by additional examples given by the teacher during the work of the first and second terms of this grade. Let concert and individual drill be given, which shall secure rapidity and accuracy.

Language.—Continue work of first term, using Stickney's Language Book, No. 2.

Geography.—Review work of first term, and continue oral lessons in the same manner to bottom of page 18.

Writing.—Primary Model Copy Book, No. 2.

Oral Instruction.—Care of the different parts of the body; cleanliness, effects of tight clothing. Morals and manners continued.

Drawing.—Krusi's Synthetic Drawing Book, No. 1. Krusi's Manual for teachers' use.

Third Grade—One year two Terms.

THIRD GRADE.—FIRST TERM.

Reading.—Appleton's Third Reader to lesson XXXVII. Follow instructions from the author to the teacher.

Spelling.—Webster's Elementary Speller from lesson XVII on page 22, to lesson LIV on page 41. Also, all the words occurring in reading lessons. Equal attention to oral and written spelling.

Arithmetic.—Appleton's Elementary Arithmetic to Article 126 on page 76, Appleton's Mental Arithmetic to Section 7 on page 20.

Language.—Teach the pupil to combine several short statements into oral sentences properly Stickney's Language Book, No 3, used according to the plan in preceding grades

Geography.—Appleton's Elementary Geography from lesson I, on page 19, to lesson XXXIII on page 45.

Writing —Primary Model Book, No 3.

Oral Instruction.—Review Fourth Grade work, enlarging upon it to suit the capacity of the pupils

Drawing.—Krusi's Synthetic Drawing Book, No 2

THIRD GRADE —SECOND TERM.

Reading — Complete Third Reader beginning at lesson XXXVII on page 100

Spelling —All words in reading lessons Also Webster's Elementary Speller from lesson LIV on page 41, to LXXIII on page 56

Arithmetic.—Appleton's Elementary Arithmetic from 126 on page 76, to Article 185 on page 108. Appleton's Mental Arithmetic from Section 7 on page 20, to Section 16 on page 38

Language.—Continue work of first term, using Stickney's Child's Book of Language, No. 4.

Geography.—Appleton's Elementary Geography from lesson XXXIII on page 45, to lesson LIX on page 69.

Writing —Primary Model Book, No 4

Oral Instruction.—Make a specialty of moral lessons. Frequent talks about honesty, truthfulness, trustworthiness, respect for the old, unselfishness, etc. Let the pupils look about among their associates for examples of these virtues, and report them in the class

Drawing.—Krusi's Synthetic Drawing Book, No 3

Second Grade.—One year —Two Terms

SECOND GRADE —FIRST TERM.

Reading.—Appleton's Fourth Reader to Lesson XXVII on page 76 Teach diacritical marks, using Webster's Dictionary as authority Encourage frequent reference to diction in the preparation of reading lessons

Spelling —Spelling from Reader and Webster's Elementary Speller, from Lesson LXXIII on page 56, to Lesson LXXXIII on page 67

Arithmetic —Complete and review Appleton's Elementary Arithmetic, beginning at Article 185 on page 108. Mental Arithmetic from Section 16 on page 38, to Section 26 on page 56

Language.—Quackenbos' Lessons in Our Language to Lesson XLI on page 60. Letter writing

Geography —Appleton's Elementary Geography, from Lesson LIX on page 69 to the bottom of page 99.

Writing —Primary Model Book, No. 5.

Drawing —Krusi's Synthetic Drawing Book, No 4

History.—Quackenbos' Elementary History to Chapter XVI, on page 49

SECOND GRADE —SECOND TERM

Reading.—Appleton's Fourth Reader, from Lesson XXVII on page 76, to Lesson LV on page 151.

Spelling.—From Reader and Spelling Book, from Lesson LXXXIII on page 67, to Lesson C on page 88.

Arithmetic —Appleton's Practical Arithmetic to Chapter X. Mental Arithmetic from Section 26 on page 38, to Section 39 on page 75

Language —Quackenbos' Lessons in Our Language, from Lesson XLI on page 60, to Lesson LXXI on page 122.

Geography.—Complete Appleton's Elementary Geography, beginning at page 100.

Writing.—Primary Model Book, No. 6.

Drawing.—Krusi's Analytic Drawing Book, No. 5.

History.—From Chapter XVI on page 49, to Chapter XXXIII on page 99.

First Grade—Two years and a half.—Five Terms.

FIRST GRADE.—FIRST TERM.

Reading.—Appleton's Fourth Reader, from Lesson LV on page 151, to Lesson LXXIX on page 211.

Spelling.—From Reader and from Speller, from Lesson C on page 88, to Lesson CXXXV on page 127

Arithmetic.—Appleton's Practical, from Chapter X to Chapter XIII. Mental, from Section 39 to Section 56.

Language.—Complete Quackenbos' Lessons in our Language, beginning at Lesson LXXI on page 122.

Geography.—Appleton's Higher Geography, to United States, on page 28.

Writing.—Model Book, No. 1.

Drawing.—Krusi's Analytic Drawing Book, No. 6.

History.—Quackenbos' Elementary History, from Lesson XXXIII on page 99, to Lesson XLIX on page 149.

Physiology.—Foster's Physiology, Science Primer Series to Section IV.

Philosophy.—Stewart's Physics, Science Primer Series to Section XLVIII.

FIRST GRADE.—SECOND TERM.

Reading.—Continue Fourth Reader from page 211, and review, complete the Book.

Spelling.—From Reader, also Speller, from Lesson CXXXV on page 127, to CI on page 159.

Arithmetic.—Continue Practical Arithmetic to Chapter XIX, and Mental Arithmetic to Section 71.

Language.—Quackenbos' English Grammar to Lesson XXXI.

Geography.—Appleton's Higher Geography, from United States on page 28, to Central and North Central States on page 52.

Writing.—Model Copy Book, No. 2

Drawing.—Krusi's Analytic Drawing Book, No. 7.

History.—Complete Elementary History, beginning on page 149.

Physiology.—Continue Foster's Physiology to Section 6.

Philosophy.—Continue Stewart's Physics to review questions on page 133.

FIRST GRADE.—THIRD TERM.

Reading.—Appleton's Fifth Reader to Lesson XXXV, on page 99 Follow the plan of the book as laid down.

Spelling.—Steady and thorough drill on the foundation of derivative words, and rules of spelling as given in Webster's Speller, beginning on page 159. Complete the book.

Arithmetic.—Continue the Practical Arithmetic to Chapter XXXV, and Mental Arithmetic to Section 89

Language.—Continue Quackenbos' English Grammar to Lesson LV.

Geography.—Appleton's Higher Geography from page 52 to South America, on page 69.

Writing.—Model Copy Book, No 3.

Drawing.—Krusi's Analytic Drawing, Book No. 8.

History.—Quackenbos' American History, to Chapter VI. on page 51.

Physiology.—Complete Foster's Physiology, from Section VI.

Philosophy.—Complete Stewart's Physics, from page 133.

FIRST GRADE.—FOURTH TERM.

Reading.—Appleton's Fifth Reader, continued from Lesson XXXV, on page 99, to Lesson LXV, on page 190.

Spelling—Words from Reading Lessons.

Arithmetic—Practical Arithmetic to Book Keeping, and review per centage. Mental Arithmetic, from Section 89 Complete the Book

Language.—Quackenbos' English Grammar, to Lesson LXXIX

Geography.—Appleton's Higher Geography from South America, on page 69, to Asia, on page 95

Writing.—Model Books, Nos. 4 and 5.

Drawing.—Krusi's Analytic Drawing, Book No. 9

History—Quackenbos' American History, to Chapter XIII, on page 101.

Physiology.—Huxley and Youmans' Physiology, to Chapter V.

Philosophy.—Quackenbos' Natural Philosophy, to Chapter VII, on page 81.

FIRST GRADE—FIFTH TERM.

Reading.—Appleton's Fifth Reader, from page 190, to Lesson XCIII on page 278.

Spelling—From Reader.

Arithmetic.—Practical Arithmetic. Book Keeping as contained in Appleton's Practical Arithmetic, and review percentage. Review Mental Arithmetic from percentage.

Language.—Complete Quackenbos' Grammar, from page lxxix.

Geography.—Appleton's Higher Geography, completed from page 95.

Writing.—Model Books, Nos 5½ and 6.

Drawing.—Krusi's Analytic Drawing, Book No. 10

History.—Quackenbos' American History to Chapter XIX, on page 147.

Physiology—Continue Huxley and Youmans' to Chapter IX.

Philosophy—Continue Quackenbos' Natural Philosophy to Chapter XII, on page 165.

Advanced Grade. Two Years.—Four Terms.

ADVANCED GRADE.—FIRST TERM.

Reading.—Fifth Reader, continued to Lesson CXXII, on page 370.

Writing—Business forms given by the teacher. Hill's Manual recommended for use of teacher.

History.—Quackenbos' American History, continued to Adams' administration, page 236.

Composition.—Quackenbos' Composition and Rhetoric, to Lesson XXXI

Physiology.—Continue Huxley and Youmans' to Chapter XVI, on page 370.

Algebra—Perkins' Elementary Algebra, to Simple Equations, on page 57.

Philosophy.—Quackenbos' Natural Philosophy, continued from page 165, to Chapter XVI, on page 289.

ADVANCED GRADE.—SECOND TERM

Reading.—From page 370 to page 461.

Writing.—Business forms given by the teacher.

History.—American History continued from page 236 to page 307

Composition.—Quackenbos', continued to Lesson LXI.

Physiology.—Continue Huxley and Youmans' to Review Questions on page 453.

Algebra—Perkins' Elementary Algebra, continued to Quadratics.

Philosophy.—Continued from page 289 to page 407. Also Appendix, on page 451

Advanced Grade—Third Term.

Reading.—From Brook's Primer of English Literature, to Chapter VI, page 108.

Drawing.—Krusi's Perspective, Nos. 11 and 12.

History.—Review Questions, from 331 to 342, inclusive.

Composition.—Quackenbos' continued from Lesson LXI. Complete the book.

Physiology.—Review Questions, from page 453 to 470.

Algebra.—Perkins' Algebra, continued to Chapter VII, on page 196.

Political Economy.—Jevon's Science, Primer Series. Complete the book.

Advanced Grade.—Fourth Term.

Reading.—From Brook's Primer of English Literature, continued to Review Questions on page 190.

Drawing.—Krusi's Perspective, Nos. 13 and 14.

Literature.—Review Questions of Brook's English Literature. Assign into regular lessons.

Algebra.—Perkins' Elementary Algebra, completed.

Geometry.—Spencer's Inventional Geometry, completed.

Chemistry.—Complete Roscoe's Chemistry, Science. Primer Series

Book-Keeping.—Review Book-Keeping, from Appleton's Practical Arithmetic

SUGGESTIONS TO TEACHERS.

Reading.—As no genuine progress can be made in any branch of study until reading has been well and thoroughly taught, let special attention be given to this important study from the very beginning, through the entire course. Be sure that the pupil can read intelligently, grasping the sense of what he reads, and you have given him the key with which he may unlock the door to a liberal education.

To accomplish this desirable result the following suggestions are of value:

1st. The pupil must understand the meaning of every word, allusion or statement contained in what he reads; whether it is historical, scientific, or otherwise. This will insure a proper *conception* of what is to be read.

2d. The next thing in order is to secure correct *expression*. To correct the indistinct utterance which is so common, there is no better remedy than phonetic spelling. Reading backward, singly and in earnest, giving the falling inflection to each word and exaggerating the final sound, is an excellent exercise. Require the pupil to give an oral abstract of each sentence in the lesson Guard constantly against rapid reading, drawling and screeching Let the tone be natural as in conversation. Cultivate the pupil's taste for good reading, by requiring him to memorize and recite poems and prose extracts, of unquestioned merit A very young child will be drawn toward a tender little poem, such as Jean Ingelow's "Seven times one," when the trash, which they are sometimes required to learn, will have little attraction for them.

Finally, study carefully, and pursue the plans laid down in the different readers of the series.

Spelling.—Learning to spell the words of the English language correctly, means hard work on the part of the pupil and teacher; and yet there are ways of making the work lighter. Training the mind through the eye is all important in this branch of study. Train the pupil to see words *as they are;* that is, to see the letters of a word in their right order and relation to each other. The careless studying of words, or rather the mental jumbling of the letters of a word, which so often passes for study, is the fruitful cause of so much of the bad spelling we daily meet with. Oral spelling is good as a memory drill, but a child should never be required to spell a word orally, until he has a picture of the word fixed in his mind by a proper study of it.

Arithmetic.—Use the Grube System through the Fifth Grade, as laid down in this course of study. Aim at rapidity and accuracy, as the all important result, through the fifth and fourth Grades; for at this early stage the child is not capable of reasoning to any great extent. *Processes* and not *problems* should be the rule as far as the Third Grade

Make arithmetic something *real* to the child. Use blocks, stones or anything that comes to hand in teaching the relations of numbers to each other. For rapid blackboard drill, use the subjoined tables, daily.

Arithmetic Tables.

These tables should be reproduced on the blackboard for mental drill The ingenious teacher can construct other similar tables for the same purpose.

ADDITION TABLE.

5's	2's	3's	4's	6's	7's	8's	9's	10's
10	12	7	5	4	12	3	9	11
6	3	9	3	9	9	2	6	4
11	6	4	6	6	11	7	12	6
5	4	8	10	10	5	8	7	10
4	9	6	4	12	10	12	11	5
1	7	12	1	7	4	19	4	3
3	2	3	11	11	6	9	1	7
7	11	5	9	3	3	11	3	12
12	5	10	12	8	2	6	1	9
9	1	1	7	5	7	5	5	2
2	8	11	2	2	1	4	8	8
8	10	12	8	1	8	1	2	1

Require individual pupils to point out on the blackboard the combination of the figure in each column above the line across the top of the table with figures below, and give only results

Add the first column of "5's" downwards and upwards until the scholar has thoroughly mastered it. Do not allow pupils to repeat five and ten are fifteen, five and six are eleven, five and eleven are sixteen, etc, but require them to point on the blackboard to each figure in the column, and give only results; downwards thus, 15, 11, 16, 10, 9, 6, 8, 12, 17, 14, 7, 13; upwards, 13, 7, 14, 17, 12, 8, 6, 9, 10, 16, 11, 15

Add the other columns in the same manner.

SUBTRACTION TABLE

6's	2's	3's	4's	8's	5's	10's	7's	9's
15	12	9	13	14	11	10	17	12
10	9	11	10	18	15	15	13	9
9	7	5	14	12	13	20	8	19
16	11	12	12	16	9	14	7	17
14	8	10	4	13	5	16	10	14
12	6	8	6	11	8	11	14	18
8	10	6	9	9	6	17	11	15
11	5	4	5	15	10	13	16	10
6	3	7	8	8	7	7	12	12
13	2	3	7	10	12	19	9	14

In teaching the line of 6's do not allow the pupils to say six from fifteen leaves nine, six from ten leaves four, etc, but require them to point to each figure on the blackboard and give only results; downwards, thus, 9, 4, 3, 10, 8, 6, 2, 5, 0, 7: upwards, 7, 0, 5, 2, 6, 8, 10, 3, 4, 9

MULTIPLICATION TABLE.

4's	3's	6's	9's	2's	5's	7's	8's	10's	11's	12's
9	3	6	11	8	10	8	3	10	12	12
12	4	12	10	11	12	12	6	8	1	6
10	8	7	1	10	1	10	12	12	11	1
2	12	11	4	6	4	9	9	6	4	2
11	10	9	12	5	8	4	5	1	8	4
8	5	4	2	4	9	1	4	2	6	8
7	6	10	6	1	3	3	1	4	4	3
4	11	8	8	3	7	6	8	3	5	11
6	9	3	5	9	5	5	7	9	7	7
3	7	1	7	2	2	11	10	5	10	10
5	1	5	9	7	6	2	2	11	2	5
1	2	2	3	12	11	7	11	2	4	9

Teach the line of "4's" by giving results only; downwards, thus, 36, 48, 40, 8, 44, 32, 28, 16, 24, 12, 20, 4; upwards, 4, 20, 12, 24, 16, 28, 32, 44, 8, 40, 48, 36.

DIVISION TABLE

7's	2's	3's	4's	5's	8's	6's	12's	9's	11's	10's
35	10	33	44	50	72	48	36	36	11	90
56	16	27	16	35	96	18	60	18	132	60
84	24	12	24	45	56	60	108	54	33	70
42	12	15	8	60	40	12	84	90	22	50
7	2	30	4	40	88	36	132	72	121	80
14	4	21	20	25	8	24	144	108	110	40
49	14	6	32	5	32	6	96	99	44	100
70	20	3	48	10	48	66	120	9	88	30
21	6	18	36	15	16	30	72	63	55	110
28	8	36	28	30	80	42	24	81	77	20
63	18	24	40	20	24	72	48	45	66	120
77	22	15	12	55	64	54	12	27	99	10

Teach the line of "7's," giving only results; downwards thus, 5, 8, 12, 6, 1, 2, 7, 10, 3, 4, 9, 11; upwards, 11, 9, 4, 3, 10, 7, 2, 1, 6, 12, 8, 5.

Language.—Directions have been given in the course for this study. One or two special exercises may be advised here.

Require the pupil to reproduce, in his own language, stories, read or told by the teacher. Changing poetry into prose is an excellent exercise in the higher grades; and copying from the open reader, in the lower and middle grades, is of incalculable value, provided the teacher is vigilant, and sees that the copying is done carefully, with reference to capitals, punctuation, spelling, etc. Considerable prominence should be given to letter writing, business letters especially. This will afford a wide field for class criticism in composition, spelling, language, and punctuation.

Geography. –Interest primary classes first in things that they can understand; common things at hand in the little world that is around them; then lead them out farther and farther, according to the plan given in the course

If the study of geography does not lead the pupil to a new interest in humanity, his teaching in this branch has been a failure. Do not burden the child's mind with long lists of unimportant towns and rivers, capes and bays, which are to him mere words; but constantly aim to bring form and locality into such a relation with men, their needs, occupations, and industries, that the pupil will obtain an intelligent idea of the features of the land, and general characteristics of the people at the same time.

Writing.—Every writing lesson should consist, in part, of drill by the teacher on the blackboard. Intelligent ideas of spacing, proportion, and slant, can only be imparted in this manner. Avoid, except in the Fifth Grade, a blind mechanical imitation on the part of the pupil. In the Fifth and Fourth Grades, let one side of the slate be ruled to exactly correspond in spacing, with the Primary Copy Books. This will aid greatly in proportioning the letters Use the long pencil for slate writing, so that the pupil can hold the pencil in the same manner as a pen. Give the most careful attention to this matter. Let correct position of the hand be considered of primary importance in the first year's work.

Drawing.—Use printed instructions accompanying drawing cards, and the manuals which accompany the drawing books

Oral Instructions.—The teachers skill will be thoroughly put to the test in this branch. The first thing needful is to gain the attention of the class. Special preparation should precede each exercise, on the part of the teacher. As soon as the interest flags, discontinue the exercise

Music.—While no provision is made for music in the course of study, it is nevertheless strongly recommended that all teachers who understand music sufficiently, shall give some time to systematic drill in the rudiments of singing. Teachers who can lead their pupils in rote singing, should teach two or three carefully selected songs each term. Do not permit boisterous singing.

How to Study —Pupils are often at a disadvantage because they do not know how to study They dwell on unimportant details, memorize by rote, and without digesting the meaning of what they study.

Let the teacher in assigning a lesson, explain how it is to be studied; what parts are not important; how to group the facts in the best manner for memorizing; show him the necessity of getting at the meaning of every word he memorizes.

Reviews.—Weekly reviews are recommended, and shall be oral.

Examinations.—Monthly written examinations may be given at the option of the teacher. Written examinations are required for promotion at the close of the term; *provided*, that any scholar failing to obtain the required per cent. may go into the next higher class on the recommendation of the class teacher.

Requirements for Promotion.—Seventy-five per cent shall be required for promotion in fifth, fourth, third and second grades; seventy per cent. in first and advanced grades.

Standard and Requirements in Fifth, Fourth, Third and Second Grades.

	Standard,	Required.
Reading	100	75
Spelling.	100	75
Arithmetic.	100	75
Language.	50	37½
Writing.	100	75
Drawing	50	37½
Geography	100	75
History	100	75

Standard of Requirements in First Grade and Advanced Grades:

	Standard.	Required,
Reading	50	35
Spelling	50	35
Arithmetic	100	70
Language	100	70
Writing	50	35
Drawing	50	35
Geography	100	70
History	100	70
Physiology	50	35
Philosophy	50	35
Composition	50	35
Algebra	100	70
Political Economy	50	35
English Literatare	100	70
Geometry	50	35
Chemistry	50	35
Book-keeping	100	70

GRUBE'S METHOD OF TEACHING PRIMARY NUMBERS FROM GRUBE'S METHOD. BY PROF. LOUIS SOLDEN.

The old, long established method in arithmetic is calculated to teach the first four processes of addition, subtraction, multiplication and division, in the order in which they are named, finishing addition with small and large numbers, before subtraction is begun, and so forth. A more recent improvement on this method consisted in excluding the large numbers altogether at the beginning, and dividing the numbers on which the first four processes were taught into classes or so called circles.

The child learns each of the four processes with the small numbers of the first circle (i. e., from 1 to 10) before large numbers are considered; then the same processes are taught with the numbers of the second circle, from 10 to 100, then on the third, from 100 to 1000, and so forth.

Grube, however, went beyond this principle of classification. He discarded the use of large numbers, hundreds and thousands, at the beginning of the course, as others had done before him; but instead of dividing the primary work in arithmetic into three or four circles or parts only, i. e., from 1 to 10, 10 to 100, etc., he considered each number as a circle or part by itself, and taught it by a method that is to be set forth in the following pages. He recommended that the child should learn each of the smaller numbers in succession, and all the operations within the range of each number, before proceeding to the next higher one, addition, subtraction, multiplication and division, before proceeding to the consideration of the next higher number. In order to guard against a mistake which has been made rather frequently, it should be stated that such examples only are considered to be within the limit of a number, and are to be taught in connection with it, in which a larger number than the one that is being considered does not appear in any way whatsoever. Thus, for instance, where the number four is taught, the teacher should exclude at the beginning addition and subtraction by fours, multiplication with 4 as one of the factors, division with 4 as the divisor, because these belong to a later and more advanced part of the course, since they involve in the sum, product or divided numbers beyond the limit of the one that is being considered. But all the examples that do not involve a higher number than four are illustrated and taught before passing over to the next higher number, five. Treating, for instance, the number 2, Grube leads the child to perform all the operations that are possible within the limits of this number, i. e. all those that do not pre-suppose the knowledge of any higher number, no matter whether in the usual classification these operations are called, addition, subtraction, multiplication, or division. The child has to see and keep in mind that 1 + 1 — 2, 2 ÷ 1 = 2, 2 — 1 = 1, 2 ÷ 1 = 2, etc.

The whole circle of operations up to 2 is exhausted before the child proceeds to the consideration of the number 3, which is to be treated in the same way. Why adhere to the abstract division of the work in arithmetic into addition, subtraction, etc. in the primary grade when these distinctions do not help to make the subject any clearer to the pupil ? The first four processes are naturally connected, and will appear so in the untaught mind. If you take away 1 from 2 and one remains, the child in knowing this, also understands implicitly the opposite process of adding one to one and its result. Multiplication and division are, in the same way, nothing but another way for adding and subtracting, so that we might say one operation contains all the others "Every text book of primary arithmetic professes to teach the numbers in some way or other," says Grube, "but to know a number really means to know also its most simple relations to those numbers, at least, which are smaller than it" Any child, however, who knows a number and its relation, must be also able to perform the operations of adding, subtracting, etc., for they are nothing but the expression of the relation in which one number stands to others. Each example shows what must be added to or subtracted from a number to raise it or lower it to equality with another, or, as in multiplication and division, it sets forth the multiple relation of two numbers. The four processes are the direct result of comparing, or "measuring," as Grube calls it, two numbers with each other Only when the child can perform all these operations, for instance, within the limits of 2, can it be supposed really to have a perfect knowledge of this number.

So Grube takes up one number after the other, and compares it with the preceding ones, in all imaginable ways, by means of addition, subtraction, multiplication and division. This comparing or "measuring" takes place always on external, visible objects, so that the pupil can see the objects, the numbers of which he has to compare with each other The adherents of this method claim for it that it is based on sound philosophical theory, and that it has proved superior in practice to the methods in use before its invention

Some of the most important principles of this method of instruction are given by Grube in the following:

"1. [Language] We cannot impress too much on the teacher's mind that each lesson in arithmetic must be a lesson in language at the same time. This requirement is indispensable with our method

As the pupil in the primary grade should be generally held to answer in complete sentences, loud, distinctly, and with clear articulation, so especially in arithmetic, the teacher has to insist on fluency, smoothness, and neatness of expression, and should lay special stress upon the *process* of solution of each example. As long as the language for the number is not perfect the idea of the number is defective as well. An example is not finished when the result has been found, but when it has been solved in a proper way Language is the only test by which the teacher can ascertain whether the pupils have perfectly mastered any step or not.

"2. [Questions.] Teachers should avoid asking too many questions. Such questions, moreover, as, by containing half the answer, prompt the scholar, should be omitted. The scholar must speak himself as much as possible.

"3 [Class and Individual Recitation.] In order to animate the lesson, answers should be given alternately by the scholars individually, and by the class in concert. The typical numerical diagrams (which in the following will continually reappear) are especially fit to be recited in concert

"4. [Illustrations.] Every process and each example should be illustrated by means of objects. Fingers, lines, or any other objects will answer the purpose, but objects of some kind must always be presented to the class.

"5. [Comparing and measuring.] The operation at each new stage consists in comparing or measuring each new number with the preceding ones. Since this measuring can take place either in relation to difference (arithmetical ratio), or in relation to quotient (geometrical ratio), it will be found to comprise the first four rules A comparison of two numbers can only take place by means of one of the four processes. This comparison of the two numbers, illustrated by objects, should be followed by exercises in the rapid solving of problems, and a view of the numerical relations of the numbers just treated, in more difficult combinations. The latter offer a good test as to whether the results of the examination of the arithmetical relations of the numbers treated have been converted into ideas by a process of mental assimilation In connection with this a sufficient number of examples in applied numbers are given to show that applied numbers hold the same relation to each other that pure numbers do.

"6. [Writing of Figures.] On neatness in writing the figures, the requisite time must be spent. Since an invariable diagram for each number will reappear in all stages of this course of instruction, the pupils will soon become able to prepare the work for each coming number by writing its diagram on their slates."

It will appear from this that Mr. Grube subjects each number to the following processes;

1. Exercises on the pure number, always using objects for illustration.

(*a*) Measuring (comparing) the number with each of the preceding ones, commencing with 1, in regard to addition, multiplication, subtraction, and division, each number being compared by all these processes before the next number is taken up for comparison. For instance, 6 is first compared with 1 by means of addition, multiplication, subtraction, and division.

(1+1+, etc. = ; 6×1=6 ; 6-1-1×, etc. =1 ; 6÷1=6,

then with 2, then with 3, and so forth.

(*b*) Practice in solving the foregoing examples rapidly.

(*c*) Finding and solving combinations of the foregoing examples.

II Exercises on examples with applied numbers

In the following, Mr. Grube gives but the outline, the skeleton as it were, of his method, trusting that the teacher will supply the rest.

The sign of division, as will be explained below, should be read at the beginning: "From........I can take away... ....times." By this way of reading, the connection between subtraction and division becomes evident.

First Step. The Number One.

"As arithmetic consists in reciprocal measuring (comparing), it cannot commence with the number 1, as there is nothing to measure it with, except itself as the absolute measure."

I. The abstract (pure) number. *One* finger, *one* line; one is once one. The scholars learn to write:

1
| 1 × 1 = 1.

II. The applied number. What is to be found *once*, in the room, at home, on the human body?

Second Step. Number Two.

I. The pure number.

a. Measuring (comparing.)

| 1 2.
| 1 $\left\{\begin{array}{l} 1 + 1 = 2 \\ 2 \times 1 = 2. \\ 2 - 1 = 1. \\ 2 \div 1 = 2. \end{array}\right.$ (Read: from 2 I can take away 1 twice.)
| 1

2 is one more than 1.
1 is one less than 2.
2 is the double of one, or twice 1.
1 is one-half of 2.

b. Practice in solving examples rapidly.

1 + 1 = ? 2 — 1 = ? 2 ÷ 1 = ? 1 + 1 × 2 = ? etc.

c. Combinations.

What number is contained twice in 2 ?
2 is the double of what number ?
Of what number is 1 one-half ?
Which number must I double to get 2 ?
I know a number that has in it one more than one. What is it ?
What number have I to add to 1 in order to get 2 ?

II. Applied numbers.

Fred had two dimes, and bought cherries for one dime. How many dimes had he left ?

A slate pencil costs 1 cent How much will 2 slate pencils cost ?

Charlie had a marble, and his sister had twice as many. How many did she have ?

How many one cent stamps can you buy for 2 cents ?

Third Step. The Number Three

I. The pure number.
a. Measuring.
(1) By 1

| | | 3

$$
\begin{array}{ll}
| & 1 \\
| & 1 \\
| & 1
\end{array}
\left\{
\begin{array}{l}
1 + 1 + 1 = 3. \\
3 \times 1 = 3 \\
3 - 1 - 1 = 1. \text{ (Better than } 3 - 1 - 1 - 1 = 0. \\
\text{for } 3 - 1 = 2,\ \ 2 - 1 = 1. \\
3 \div 1 = 3
\end{array}\right.
$$

This ought to be read: From 3 I can take away 1, 3 times, or, in three, 1 is contained three times. The ideas of "to be taken away" and "to be contained" must always precede the higher and more difficult conception of dividing.

(2) Measuring by 2.

$$
\begin{array}{ll}
| & | \\
& |
\end{array}
\left\{
\begin{array}{l}
2 + 1 = 3, \quad 1 + 2 = 3. \\
1 \times 2 + 1 = 3. \\
3 - 2 = 1, \quad 3 - 1 = 2. \\
3 - 2 = 1. \text{ (1 remainder.)}
\end{array}\right.
$$

(From 3 I can take away 2 once, and 1 will remain; or, in three, 2 is contained once and one over.)
3 is 1 more than 2, 3 is 2 more than 1.
2 is 1 less than 3, 2 is one more than 1.
1 is 2 less than 3, 1 is 1 less than 2.
3 is 3 times 1, 1 is the third part of 3
1 and 1 are equal numbers; 1 and 2, as well as 2 and 3 are unequal.
Of what equal or what unequal numbers does 3 consist, therefore ? etc

b. Practice in solving examples rapidly.
How many are $3 - 1 - 1 + 2$ divided by 1 ?
$1 + 1 + 1 - 2 + 1 + 1 - 2 + 1 + 1$? $3 \times 1 - 2 \times 1 + 1 + 1 - 2 + 1 + 1$? etc.

The answers must be given immediately. No mistakes can arise as to the meaning of these examples; the question whether $3 + 1 - 2$ means $(3 + 1) - 2$ or $3 + (1 - 2)$ is answered by the fact that these examples represent oral work, and that it is supposed that the operation indicated by the first two numbers $(3 + 1)$ is completed mentally before the next number is given

c. Combinations.
From what number can you take twice 1 and still keep 1 ?
What number is three times 1 ?
I put down a number once, and again, and again once, and get 3; what number did I put down three times ?

II. Applied numbers.
How many cents must you have to buy a three cent stamp ?
Annie had to get a pound of tea for 2 dollars. Her mother gave her 3 dollars. How much money must Annie bring back ?
Charles read one line in his primer; his sister read two lines more than he did. How many lines did she read ?
If one slate pencil cost one cent, how much will 3 slate pencils cost ?
Bertha found in her garden 3 violets, and took them to her parents. How can she divide them between father and mother ?

Fourth Step The Number Four.

I. The pure number.
a. Measuring.

(1) By 1.

| | | | 4

1
| 1
| 1
| 1

1 + 1 + 1 + 1 4, (1 + 1 = 2, 2 + 1 = 3.)
4 × 1 4.
4 − 1 − 1 − 1 1.
4 − 1 = 4

(2) Measuring
By 2.

| 2
| 2

2 + 2 = 4.
2 × 2 = 4.
4 − 2 = 2.
4 ÷ 2 = 2.

(3.) Measuring by 3.

| | 3.
1.

3 + 1 = 4, 1 + 3 = 4.
1 × 3 + 1 = 4.
4 − 3 = 1, 4 − 1 = 3.
4 ÷ 3 = 1, (1 remainder.)

(In 4, 3 is contained once and 1 over; or, from 4 I can take away 3 once, and 1 remains.)

Name animals with 4 legs and with 2 legs. Wagons and Vehicles with 1 wheel, 2, and 4 wheels, compare them.

4 is 1 more than 3, 2 more than 2, 3 more than 1.
3 is one less than 4, 1 more than 2, 2 more than 1.
2 is 2 less than 4, 1 less than 3, 1 more than 1.
1 is 3 less than 4, 2 less than 3, 1 less than 2.
4 is 4 times 1, twice 2.
1 is the fourth part of 4, 2 one-half of 4.
Of what equal and unequal numbers can we form the number 4 ?

b Problems for rapid solution
2 × 2 − 3 + 2 × 1 − 1 − 2 + 2 ?
4 − 1 − 1 + 1 + 1 − 3, how many times less than 4 ? etc.

c. Combinations.
What number must I double to get 4 ? etc.
Four is twice what number ?
Of what number is 2 one half ?
Of what number is 1 the fourth part ?
What number can be taken twice from 4 ?
What number is 3 more than 1 ?
How much have I to add to the half of 4 to get 4 ?
Half of 4 is how many times one less than 3 ? etc.

II. Applied numbers

Caroline had 4 pinks in her flower pot, which she neglected very much. For this reason, one day one of the flowers had withered; the second day another, and on the following day one more. How many flowers did Caroline keep ?

How many dollars are 2 + 2 dollars ?
Three apples and one apple ?
4 quarts = 1 gallon.

Annie bought a gallon of milk, how many quarts did she have ? She paid one dime for the quart, how many dimes did she pay for the gallon ?

4 { quart, quart, quart, quart,
4 { 1 dime. 1 dime 1 dime. 1 dime

What part of 1 gallon is 1 quart?

If 1 quart costs 2 dimes, can you get a gallon for 4 dimes?

A cook used a gallon of milk in 4 days How much did she use each day?

The recitations should be made interesting and animated by frequently varying the mode of illustration, and in this the ingenuity of the teacher and her inventive power can display themselves to their best advantage

It is, of course, superfluous to describe the infinite variety of objects which may be used, but a few suggestions will perhaps prove acceptable. Those illustrations, which compel the whole class to be active, or which are of special interest, and arouse the attention of the pupils, are of greater value than others. For instance: "Class, raise two fingers of your right hand; two fingers of your left hand. How many fingers have you raised? Two fingers and two fingers are how many? Two and two are how many? Carrie may show to the class with her fingers that two and two are four"

This plan of illustrating should be used very frequently, as it requires the whole class to be active. The following illustration is also commendable, as it hardly ever fails to enlist the interest of the class · every pupil likes to be allowed to illustrate a problem in this way "From four I can take away two how many times? Emma may show that her answer is correct by making some of the other girls stand (The class knows that those whom Emma teaches must stand until she makes them take their seats again) Emma, four little girls are standing here. From 4 little girls I can take away 2 little girls once (making two of the four take their seats) Twice (making the other two sit down). From 4 little girls I can take away 2 little girls twice. From 4 I can take away 2 twice. 4÷2=2"

Grube thinks that one year ought to be spent in this way on the numbers from 1 to 10. He says "In the thorough way in which I want arithmetic taught, one year is not too long for this most important part of the work. In regard to extent, the scholar has not, apparently, gained very much—he knows only the numbers from 1 to 10. But he knows them." In reference to the main principles to be observed he demands, first, "that no new number shall be commenced before the previous one is perfectly mastered;" secondly, "that reviews should frequently and regularly take place;" and, lastly, "that whatever knowledge has been acquired and fully mastered by illustration and observation must be thoroughly committed to memory."

"In the process of *measuring*, pupils must acquire the utmost mechanical skill." It is essential to this method that in the measuring, which forms the basis for all subsequent operations, the pupils have before their eyes a diagram illustrating the process.

The leading idea is the same throughout Grube's Method. To show the principle of teaching the higher numbers to 100 is to recapitulate the principles that are to guide the teacher in his treatment of the numbers 1 to 10

That the four processes are taught with each number before the following one is considered, forms, no doubt,, a characteristic feature of Grube's Method; but it is a common mistake to suppose that it is the leading idea. It certainly emanates from this idea, but it is not the idea itself. The leading principle is rather that of objective illustration. In a very general way it may be said that in examples in primary arithmetic two numbers are given and their relation, expressed by a third number, is to be found Hence the elementary processes may be considered as the comparing of one number with the other, or the measuring of one by the other. On the basis of this general theory, Grube suggests a general plan of illustration, according to which the larger number of the two numbers given as represented by the total number of lines or dots placed on the blackboard. These lines are arranged into sets or groups, each containing as many lines or dots as are indicated by the smaller number of the two. Thus, if the numbers 6 and 2 are to be compared with each other, the illustration consists of six dots arranged two by two

O O

O O

O O

The measuring of 9 by 4 is illustrated by four dots and four dots and one dot.

O O O O

O O O O

O

This contains the main principle of Grube's Method. If perception has seized this illustration and wrought it into a mental picture, the solution of all the existing elementary relations between the two numbers has been grasped implicitly. For the four processes are simply different interpretations of this symbolic diagram. When this picture appears before the mind it may be interpreted as addition or multiplication, i. e. our illustration may be read

$$4 + 4 + 1 = 9 \text{ or } (2 \times 4) + 1 = 9,$$

and by the retrograde process, when the illustration is made to disappear from the blackboard, it may be interpreted by subtraction or division, as $9 - 4 - 4 = 1$, or from 9 I can take away 4 twice and leave 1. But the main point in this is that the whole process is based on well selected and arranged illustrations, and is an object lesson on numbers.

A plan of teaching which ignores this main point and flatters itself to have found the gist of the new idea by jumbling together addition, subtraction, multiplication and division, without the most extensive use of illustrative objects, and without systematic arrangement, has nothing in common with Grube's Method. In the latter, the clearest order and regularity prevail throughout. Below 10, each number is compared with the number 1, by means of addition, subtraction, multiplication, and division, then with the number 2, then with the 3, etc. The pupil will soon learn to perceive the regularity of this process, and at the moment he has understood that part, he can by independent work discover the primary arithmetical relations of a number and prepare a synopsis or diagram of the same.

A frequent and very dangerous mistake is the omission, or neglect, of applied examples.

The pure number as the universal expression of arithmetical truth is of the greatest importance, but the pupil throughout his school course finds the greatest difficulty in working with applied numbers. Moreover, arithmetic is studied for life, and in life there are none but applied examples. Hence, after the universal, the pure number has been mastered by means of observation, particular application should follow immediately, and copious examples, clothed in the most varied forms, should be solved. The training which the pupil receives from practice with applied problems is different in kind from that with pure numbers, and hence cannot be slighted in the the primary grades without retarding the progress in the higher classes. Without sufficient practice in this direction, there is danger of mechanical and dull work, and the best opportunities for the pupils display of inventive ingenuity are lost.

SCHOOL CENSUS OF PERSONS FROM 6 to 21 YEARS, TAKEN IN MAY, 1882.

Yuma County	608
Apache "	924
Pinal "	620
Yavapai "	2080
Pima "	2487
Maricopa "	1320
Graham "	457
Mohave "	228
Cochise "	1131
Gila "	428
Total,	10283

From this showing it will be seen that the number of children in the Territory have nearly doubled within the last two years

TEACHERS EMPLOYED IN DIFFERENT COUNTIES.

	Male	Female	Total
Apache County	6	9	15
Pinal "	5	5	10
Gila "	1	5	6
Yavapai "	11	17	28
Maricopa "	3	12	15
Mohave "	2	2	4
Graham "	5	4	9
Cochise "	5	15	20
Yuma "	1	2	3
Pima "	5	11	16
Total.	44	82	126

NUMBER OF SCHOOL DISTRICTS.

Yavapai County	28
Maricopa "	11
Mohave "	3
Cochise "	11
Graham "	7
Apache "	15
Gila "	3
Pinal "	5
Pima "	10
Yuma "	5
Total..	98

VALUATION OF SCHOOL PROPERTY, 1882.

Pima County	$30,000 00
Maricopa "	23,170 00
Pinal "	4,406 50
Mohave "	1,100 25
Gila "	6,204 00
Graham "	5 026 00
Yavapai "	28,317 12
Cochise "	27,000 00
Apache "	9,027 00
Yuma "	2,500 00
Total....	116,750 87

TABLE SHOWING RECEIPTS AND DISBURSEMENTS FOR THE YEAR 1882.

	Receipts	Disbursements.
Cochise County	$19,312 50	$19,104 25
Yavapai "	15,574 00	15,071 89
Graham "	4,912 00	4,802 00
Gila "	3,080 18	2,927 14
Mohave "	4,660 66	2,139 58
Pinal "	10,203 66	5,504 16
Maricopa "	10,746 43	8,739 05
Pima "	18,721 02	18,669 48
Apache "	2,533 80	2,413 88
Yuma "	3,904 10	3,896 50
	$93,648 35	$83,267 93

Since the Reports from the County Superintendents were received, the sum of $8,319,00 has been apportioned to the different Counties by the Territorial Board of Education, making the receipts from all sources during the year $101,967,35. We estimate, as near as can be ascertained from reports from different districts, that there are outstanding debts for school buildings, teachers pay, etc., to the amount of $15,000, which, when paid will make an aggregate on account of expenditures for the year 1882, of $98,267,93, leaving a balance on hand after debts are paid of $3,699,42.

From this statement it will be seen that the receipts for the year 1882 are nearly double those of the preceeding year, and the disbursements for the same year nearly thrible those of the preceding one.

LAND GRANT FOR UNIVERSITY PURPOSES.

The following are copies of the correspondence relating to the selection of seventy-two sections of Public Land for University purposes in Arizona.

DEPARTMENT OF THE INTERIOR,
General Land Office,
WASHINGTON, D. C., March 30th, 1882.

Hon M. H. Sherman, Superintendent of Public Instruction, Prescott, Arizona

SIR : — In the matter of the grant of seventy-two sections of public lands to the Territory of Arizona for University purposes under the Act of February 18, 1881, (21 Stat. 326) to "be immediately selected and withdrawn from sale, and located under the direction of the Secretary of the Interior, and with the approval of the President of the United States," I have to advise you that, by letter of the 6th instant, the Hon. Secretary of the Interior instructed me as follows, that, "unless there has been legislative or executive action by the Territorial authorities in any case. I deem it proper, therefor, to designate the Superintendent of Public Schools in each of said Territories of Dakota, Montana, Arizona, Idaho and Wyoming, as agents of this Department to make the preliminary selections, and you are accordingly instructed to so advise them, giving notice also, to the respective Governors of the Territories of such action, and ascertain whether or not they will accept the service in view of their intimate relation to the important educational interests involved. Should they so elect to act, without compensation from this Department or the general government, you will at once instruct them as to the proper method of presenting their lists to the District Registers and Receivers, who will be required to give such aid and assistance as may be necessary to accomplish the purposes of the Act and make the endowment effectual."

"In case the Superintendent of Public Schools in any Territory declines to act, or some other officer be designated by the legislature or Governor, you will report the matter for the information of the Department."

I have therefore to request, that you advise me at your earliest convenience, whether or not you will accept the position as agent of the Department on the terms indicated in the Secretary's letter.

In case you should decline to act, or some other officer be designated by the legislature or Governor, you will please advise me thereof, so that I may report the fact to the Secretary.

Very respectfully,
[Signed] N C. McFarland,
Commissioner

In accordance with the above instructions, letters were addressed by the Superintendent of Public Instruction to the Register of the U. S Land Office at Tucson; to the Surveyor General at Tucson, and to the Register of the Land Office at Prescott

By and with the advice of the Hon. W N Kelly Register of the U. S Land Office at Prescott, the following selections were made

Sections 2, 8, 10, and 12, 18, 14, 20. 22, 24, 30, 28, 26, 32, 34. Township 20 North, Range 5, East

Sections 2, 4, 8, 10, 12, 18, 14, 20, 22, 30, 28, 26, 32, and 34. Township 20 North, Range 6, East.

Sections 4, 6, and 18. Towoship 20 North, Range 7 East

Sections 2, 4, 8, 10, 18, 20, 22, 30, and 28 Township 21 North, Range 8, East.

Sections 6, 8, 18, 24, 30, 28, 26, 32, and 34. Township 21 North, Range 7, East

Sections 8, 10, 12, 14, 18, 20, 22, 24, 26, 28, 30, 34 Township 21 North, Range 6, East.

Sections 12, 18, 14, 20, 22, 24, 26, 28, 30, and 34. Township 21, North, Range 5, East.

Section 2, Township 21 North, Range 3, East

A copy of the foregoing list of selections of lands was submitted to Surveyor General Wasson of Tucson, and to the Hon. Henry Cozens, Register of the Land Office in the same city.

In reply the following letters were received:

U S Surveyor General's Office,
Tucson, Arizona, July 13, 1882.

Hon. M. H. Sherman, Superintendent Public Instruction, Prescott, Arizona

My Dear Sir: — Although I have never been upon the sections of land you have selected for University purposes, I am satisfied they are as valuable as any you could find without very great labor and a careful inspection *on the ground* of all the surveyed lands in the Territory

I return herewith the list forwarded with your letter of the 10th inst.

Very respectfully,
[Signed] John Wasson,
U. S Surveyor General

Office of the Register U. S. Land Office,
Tucson, A. T., June 29, 1882.

M H Sherman, Esq, Supt. Public Instruction. Arizona, Prescott, A. T.,

Dear Sir: —I have examined with care the location of seventy-two sections of public land, for University purposes, made by you, and will state that I do not think better selections could have been made.

The land being timbered is a great advantage, as it enhances its value.

I am your obedient servant,
Henry Cozens,
Reg. U. S Land Office.

The land is heavily timbered, and it is said, by those who know it best, to be very valuable Its location is in the neighborhood of the San Francisco Mountains, in the northeastern portion of the Territory

In this connection, I would respectfully suggest that some action be taken by the Legislature to prevent timber being cut therefrom.

REPORTS OF COUNTY SUPERINTENDENTS.

Office Co. Sup't. Public Schools,
St. Johns, Apache County, Arizona, Jan. 1st, 1883

To the Hon M. H. Sherman, Sup't Public Instruction

Sir :—I have the honor to transmit herewith, in accordance with the law of 1881, my Annual Report of school matters in Apache county. Owing to the present execrably bad mail facilities throughout this county, this, my Annual Report, is not as full and complete as I could wish it to be; hence, from the causes above mentioned, I failed to get reports from two (2) of the school districts in this county.

The following is the yearly summary, beginning January 1st, A. D. 1881, and ending December 31st A. D. 1881, viz:

Total number of School Districts in county	15
“ “ Schools	11
“ “ Teachers employed	15
“ “ School-houses	6
“ “ Boys between 8 and 14	269
“ “ Girls between 8 and 14	217
“ “ Children between 8 and 14.	486
“ “ Boys from 6 to 21 in county	518
“ “ Girls from 6 to 21	406
“ “ Children from 6 to 21	924
“ “ School months for the year	48
General average attendance for nine schools	35 49
General average for nine schools for year	328
Cash on hand January 1st, A. D. 1881.	000
Total amount received from all sources for year	$2,533 80
Total amount expended for all purposes	2,413 88
To balance carried over for 1882	119 92
Average wages paid teachers	52 50

Books used—those prescribed by Board of Education.

No reports have been received from school districts Nos 5 and 8.

Remarks. The present school system in our sparsely settled counties is entirely inadequate to meet the educational interests of the counties, as the amount apportioned to many of the districts is not sufficient to maintain a school for three months One of the principal causes of this is the low average attendance at many of the country, and I may say, of many of the village schools, the "compulsory school law" being a dead letter upon the statutes.

Most of the schools, in fact, all the schools in this county are of a "primary" character; therefore I would suggest additional legislation in this matter, viz: A law should be enacted compelling County Superintendents to apportion $100 to each school district in which schools have been regularly taught, which sum ought to be sufficient to run a primary school for three (3) months. This method would prevent (certain) frauds which are systematically practiced here by a certain sect peculiar to this county. The surplus of the school fund, after deducting Superintendent's salary, should be held as a sinking fund, to be expended by the Commissioners hereafter appointed or elected, in the erection and endowment of and maintainance of a High School; such school to be established at the county seat of their respective counties

All of which I have the honor to respectfully submit.

Yours truly,

Charles A. Franklin,
Sup't Public Schools, Apache Co.

REPORT OF THE SUPERINTENDENT OF PUBLIC SCHOOLS, COCHISE COUNTY.

TOMBSTONE, A. T., December 31, 1882

Hon. M. H. Sherman, Sup't Public Instruction:

DEAR SIR :—Herewith I return to you the Annual School Report of Cochise county. In performing this my last official act as County Superintendent of Schools of Cochise county, may I be permitted to express my sincere thanks to you for your able and earnest administration as Superintendent of Public Instruction during the last two years. I feel that the friends of the school cause of this county have especial cause to be grateful.

I trust you will not think me egotistical, but I feel some pride in contemplating the progress made in the school cause in this county during the last two years. Cochise county was organized as a separate division on the 1st of March, 1881. At that time we had three organized school districts within the Territory included in said county, with the schools badly organized and general confusion, the attendance being a mere handful compared with the present. Now we have eleven organized districts, all excepting one maintaining very good schools, with a good earnest feeling on the part of the people in behalf of their school. In fact, I think it is not expressing the situation too strong to say that there has been, and is, a general revival in the school cause of this county, and we are vain enough to challenge comparison with any county in the Territory.

I cannot refrain from making special mention of the schools of the city of Tombstone. When the county was organized we had two teachers (females), with an attendance of less than one hundred pupils; now five teachers, with an average attendance of two hundred and forty. The rapid increase of this school is simply wonderful, and is largely attributable to the growing feeling of confidence in the management and respectability of the school. Great credit for this result is due Prof. M. M. Sherman, Principal, and the efficient corps of assistants. Also the Board of Trustees, headed by Hon. T. J. Drum, are entitled to much praise for this result.

In concluding this letter it only remains to be said that the future is bright for the friends of education in this county. The only serious obstacle in putting our schools on a first class basis has been the want of money. Our Board of Supervisors has been very unconcerned about the school cause, and have given us the smallest amount of funds possible under the law, but thanks to the intelligence of the people of this county, they are soon to retire, to be replaced by men that have a better appreciation of the civilization of the age.

I now in winding up this letter, also wind up my career as School Superintendent, and express the hope that you will ever be found as zealous a friend of education as you have shown yourself to be since my acquaintance with you.

Your Obedient Servant,
J. H. LUCAS,
Superintendent Schools, Cochise County.

REMARKS BY HON. G. H. HYATT, SUPERINTENDENT OF EDUCATION, GRAHAM COUNTY.

TEACHERS :—In reporting upon the condition of the schools during the past year, I am happy to say, that, while there has been quite a wide range in the qualifications of the teachers employed, there has been no instance, to my knowledge, of a failure of working up to the ability possessed, but in every instance an honest and faithful discharge of the duties of the school room, so far as understood. In this all our teachers have had my respect, and have been deserving of the respect of the district where they have taught.

But I am anxious to see a higher grade of qualifications for this great work of teaching, and, to such an extent, of moulding the minds, the tastes, the habits, and the manners of our children and youth. Could I secure it, I would have none but a master workman in every school-room. It were more prudent to trust a valuable chronometer to an apprentice hand for some delicate repairs, than to trust the minds, morals, tastes, habits, and manners of our children to the moulding influences of unsymmetrical character and unskilled and partially qualified teaching. We need teachers who make teaching a business, who have qualified themselves for it, and who are ever seeking to improve themselves and their schools.

I would suggest to our school districts that they get the best men they can for School Trustees and that they do not change for the mere sake of rotation. Get a teacher, if possible, who has an established reputation for teaching, and when such a one is secured, keep the school under the same teacher as long as possible.

We would suggest some more feasible plan of apportioning our school funds. In small districts where the attendance is not more than 8 or 10 pupils, schools should be kept going for at least six months in the year.

Would it not be well to allow each district after it has commenced a school one hundred or two hundred dollars and then apportion the balance due it on the ratio of attendance as under the present law. Some plan of this sort would work a great deal better.

I find that some more encouragement to small districts is absolutely necessary. It is too often the case that the Probate Judge who is County Superintendent by virtue of his office, cannot find time to visit the schools.

If the law could be amended so as to allow him a Deputy, much more efficient work could be performed.

REMARKS BY THE HON. G. A. SWASEY, SUPERINTENDENT OF EDUCATION GILA COUNTY.

CONDITION OF SCHOOLS:—The general condition of the common Schools in this county is not as good at the present time as might be wished.

Most of our school buildings in outside precincts are erected at the expense of the parents of the children. Cannot some plan be suggested by which the school moneys can be apportioned so as to give more aid to outside districts?

I would suggest that one-fourth of the Territorial and County school fund to which each county is entitled be divided equally among all the districts of the county. This would be of great aid in placing outside districts on a better footing, and there would be enough aid rendered in this way to enable these districts to employ competent teachers. Our school at Globe is in a flourishing condition, and deep interest is taken in it. Under the present mode of apportioning school moneys it will always have a surplus.

REMARKS BY HON THOS. G. GREENHAND, SUPERINTENDENT OF EDUCATION, MARICOPA COUNTY.

Owing to the fact that this county is an agricultural one, we have a growing permanent population.

Our school census in May of 1882 shows a population of 1320 persons between the age of six and twenty-one.

Our people are prosperous, and in time will be able to allow their children to attend school during the greater part of the term.

The election for school officers should not be held at the same time as the general election.

The voters for several outside precincts meet in Phœnix for example in September, and vote at the general election. The result is that no Trustees in their precincts are elected, and under the law must be appointed by the County Superintendent.

This is a matter of most vital importance to them, but in the general excitement of politics it is forgotten. We think the time of electing school officers should be in May or June, and then the electors of the different school districts would have the matter entirely in their hands, and good men would be chosen to fill these offices.

Trustees are often negligent in sending in their reports, and some plan should be adopted by means of which better returns could be procured

I would also suggest that teachers make their reports monthly instead of quarterly as is prescribed under the present law It is often the case that when a fractional part of a quarter is taught no report is sent in.

REMARKS BY HON. CHAS. ATCHISSON, SUPERINTENDET OF EDUCATION, MOHAVE COUNTY.

SUGGESTIONS·—In addition to the qualification for imparting knowledge of arithmetic, geography, etc, there is requisite for a good teacher the general information which is so important for instruction in reading.

This properly ranks among studies the first as the key of knowledge and the source of culture.

It is highly desirable that young people should go forth well instructed in this department To this end teachers should be constant learners Indeed, who should not be? "Not as though I had already attained, or am altogether perfect, but I follow after." With this spirit a teacher keeps an active mind, and by effort for self-improvement impels the scholar to continual progress. But the matter rests only in part with teachers Parents may effect almost more than they. The home circle should be a reading school; books interesting to the children should be read aloud by the children, with the family for listeners To say nothing of the profit thus gained by all, the young reader is encouraged to effort, and helpful suggestions furnish means of improvement.

In this county there are schools at the following places· Mineral Park, W G Blakely teacher, very efficient At Sandy, A. Cornwall taught with much success

Mrs. Ida Kimble taught six months at Signal at a salary of eighty dollars per month. Success good

At Hackberry there is no teacher at present A move was made by the citizens to raise by subscription, a fund for the purpose of building a school house. The project was commenced, but abandoned, and nothing realized.

Mohave, is one of the most promising counties in Arizona, and with the advent of the Atlantic and Pacific R. R. that will soon cross it from East to West, we hope for a great awakening in Educational matters

REMARKS BY HON. J. S. WOOD, SUPERINTENDENT OF EDUCATION, PIMA COUNTY.

GENERAL REMARKS.—In order to have successful schools it is necessary to employ *good teachers.* This responsibility rests upon the school trustees, and they cannot be too careful in their selections.

They should take into consideration not only education, but also capacity to govern, former success, and *moral character.* The practice of placing a person in charge of a school on account of friendship, to gain pecuniary advantage, or for any purely personal motives, ought not to be tolerated.

Some teachers have a loose habit of filling out their registers, which causes considerable trouble in making out reports.

We would call the attention of School Trustees to the following statute

SCHOOL LAW.—Section 20. It shall be the duty of school teachers in each public school taught in this Territory to keep a correct daily record of the number of children attending such school, and, at the expiration of each quarter, to certify under oath to the Board of Trustees of the school district in which said school was taught, the average daily attendance at said school during the said previous quarter; and it shall be the duty of said School Trustees to forward a statement, verified by the oath of one or more of said Trustees, of the average daily attendance at said school during the previous quarter, as furnished by said teacher, to the Superintendent of Public Schools of the county in which said school has been taught

Our schools in this county for the last year have made considerable progress, but the main difficulty we have to labor under is the short period of time the schools in outside districts can be kept going during the year. I am in hopes some better plan of apportioning the school fund can be adopted. The schools in Tucson are progressing finely, and have plenty of funds on hand to enable us to put them on a still better footing.

Remarks by Hon. J. W. Davis, Superintendent of Education, Pinal County

General Remarks.—There is perhaps no more common topic of conversation than the schools. The plans of those who have charge of them, their successes and their failures, are constantly being unfolded and held up to the public gaze, sometimes with intelligence and fairness, but oftener without any knowledge of facts. Every one should be sufficiently interested in the schools not to take for granted, and repeat what some prejudiced person may say in regard to them, but to investigate for themselves. Money enough is yearly expended to obtain a good teacher for each school. And we have been pleased to notice that during the past year the Trustees have made an effort to secure the services of such. We think it would be better, however, to retain a good teacher for successive terms than to change so often. Great waste of time would be saved and much more accomplished.

Teachers possess no right to rely on past attainments. New methods are constantly being introduced, and they should be sufficiently alive and in earnest to know and to use those which are beneficial.

The schools during the past year have been above the average—none very poor, some very good. The object of the schools is to train youth to become useful and happy men and women, with the least waste of time; to strengthen the character, and to give to each so much profitable instruction as will fit them to do creditable work in life. To accomplish this the standard of the schools must be raised. Some of the teaching during the past year has not been such as would bring about this result. Many teachers confine themselves very closely to text books; consequently but little practical knowledge is acquired by the pupils

The present method of apportioning our school moneys is radically wrong. The populous towns receive far more than their share of the school fund. Should a certain amount, say $100, be allotted to each outside district, and the balance be divided as under the present law, our country schools could be kept in session longer. Another plan would be to divide a certain proportion of the school moneys equally among all the districts and the balance as at present

Remarks by Hon. A. O. Noyes, Superintendent of Education, Yavapai County.

Suggestions for Improvement:—The workings of our schools should be closely inspected Schools should be regularly and systematically visited by the directors, either by standing committees, or by special committees appointed monthly. These committees should report the condition of each school to the Board at their regular monthly meetings. This would prevent many partial, and a large number of total failures in teaching.

The proper remedy could be applied at once, and much of the children's valuable time would be saved.

Visits by parents, made in a proper spirit, are a means of encouraging both pupil and teacher.

The salary of teachers should be graded according to a just basis. The grade of the school, its size and condition, the successful experience of the teacher employed the teachers intellectual qualifications as indicated by his certificate, and his services in the same school or district for a number of years, should all be taken into consideration in fixing the salary. It is contrary to all business principles to pay inexperienced the same wages as the experienced receives

INCREASE IN NUMBER OF SCHOOLS:—Our schools have increased in numbers since my last annual report. We now have 28 school districts established and more teachers are now employed than any other county in the Territory.

Our school census is next to the highest in the Territory and foots up to 2086 children.

The present law is faulty in not providing more funds for outside districts. The County Superintendent should have a deputy in this county, as his time is almost wholly taken up with Probate matters.

School Trustees have been very backward in sending in their reports, and some better plan for securing prompt returns should be adopted.

REMARKS BY HON. ISAAC LEVY, SUPERINTENDENT OF EDUCATION, YUMA COUNTY.

THE SECRET OF SUCCESS:—One great truth must never be forgotten, and that is, that the spirit and life are more than any form whatever. We are confident that such changes might be made in this town, either in the arrangement or in the management of its school, or in both, as would be greatly advantageous to the cause of Education; and we would be extremely glad to see such changes made. But we believe that a deeper and a more wide spread conviction of the necessity of a good common school education for our boys and girls, that they may become useful men and women, and good citizens, is of far greater importance than any such changes as we have spoken of.

It is a matter of serious regret to myself that there is not a more general interest in the cause of education.

We are glad, to be sure, that there is as much as their is. Some of our districts are keenly alive to the interests of their children in this direction.

But the general interest is not what it ought to be. If we are not mistaken, the interest and energy employed in the accumulation of property are generally far greater than in that of education. This ought not so to be.

It is to our mind, a source of certain, and not far distant serious, if not fatal, injury to our prosperity as a town.

It will result in the deterioration of the present generation, and will tend to drive from us the better class of our citizens, while holding out no inducement for others of that class to come among us

Owing to our schools being isolated and far apart, I have not been able to give them the supervision that I could have wished. It would seem well to amend the present law so that the County Superintendents could appoint deputies I feel certain that much good would result from this change

REMARKS BY PROF. F. STANTON, PRINCIPAL PUBLIC SCHOOLS, FLORENCE.

THE ESSENTIALS OF A GOOD SCHOOL:—To interest a child, is to enlighten its mind—to make it active,—in other words, impressible But what are the means to be employed? what will interest a child? This is not so easy to determine. Different means are required by different children, according to their natures, their inclinations, and temperaments. Here the discernment of the teacher comes in; he must know his scholar. He must measure its capacity, remark its weak points and its salient, and get on the right side of the child. A teacher beloved is half the battle won; hated or feared, there is little progress. The teacher should be willing to consult with parents, but not to be dictated by them. Moral agencies should be employed in the school room. The teacher should respect his pupils, if he would have them respect him. But when kind treatment and higher motives fail, there should be a "*must*" and "must not," guarded by such penalties as shall secure immediate and absolute obedience. The teacher should labor just as faithfully in a small school, and for small wages, as in a large school and for large wages. It is this that will prepare the teacher to ascend to the position which he may desire. The teacher should labor to acquire knowledge, not only in preparation to teach, but so long as he teaches. In short, whatever the teacher does to make a good school will come under the head of labor. The earnest, the persevering, the *studious* teacher is the successful one.

Management of Pupils:—Children do not like long sermons, but they want the beginnings of things brought down to them. Copious illustration and variety are what children demand. In the course of a day they will run, jump, play games, wade brooks, climb fences, and perform an amount of light physical exercise which would completely exhaust the ordinary man; but, at the same time, if you set them to *shoveling* they soon tire out.

Children are possessed of bright wits; they are relatively smarter than men; they say, for their years, prettier and profounder things; they are more vivacious and impressionable, wide awake and inquiring; but for all that, they cannot stick to any one thing long at a time like a man.

The true teacher will take these facts into consideration and act accordingly.

What children need in the way of language is the ability to speak correctly and politely on all occasions. We may teach parsing and analysis for a life time without attaining this desired result. There is no danger of our having too much analysis, but we do need more synthesis; we need constant practice in the construction of sentences.

The study of grammer, of composition, should be made one and the same thing and that should be language lessons

The teacher should be a model for the pupil in point of language and grammatical accuracy. Children are quick to catch an ungrammatical word or expression.

Remarks of Prof. O. S. Frambees, late Principal of Phœnix Public Schools.

Primary Schools.—Years ago a primary school was considered a place of no particular importance. It was simply a place where the smaller, children could go and be safe, and no particular attention was paid to the number of the scholars or the qualification of the teacher.

There was nothing in particular required of them in regard to order or recitations, but they were considered a sort of tender or supply train to the departments of a higher grade. But to-day how changed! Facts before us go to show that, with proper training, there is no time in a child's school life that is more susceptible of restraining influences than when it first enters a school, and habits formed at this time of life are permanent and lasting. All admit that the mental capacity of a child is something that can be cultivated, and past experience goes to show that there is no time that this can be done so successfully as when a member of the primary schools.

Irregularity of Attendance.—Irregularity of attendance is a serious evil in our schools. A scholar who is inconstant at school cannot sustain his standing in the class, and, as he finds himself gradually falling behind his classmates, becomes discouraged, careless, and indifferent, gradually slackens his efforts, and finally slides down to the foot of his class, or very likely out of school altogether.

Not unlikely the blame is laid upon the teacher or management of the school rather than to the true cause. The remedy lies with parents. Let them see that their children are at school regularly, and there will be less occasion to complain of their want of progress, or of discouragement in their studies.

While a true teacher is always anxious that every pupil should be benefited by his instructions, let no parent suppose for a moment that it is any loss to the teacher that his children do not attend school. Children under such influences are usually of little benefit to themselves or the school.

PHYSICAL DISCIPLINE.—With honorable exceptions, sufficient attention is not paid by our teachers to the sanitary condition of the school-room, or to the physical training of their pupils.

The object of education is, to produce, so far as human agency can, "sound minds in sound bodies" Care should be taken that the school-room be neat and tidy, that its temperature be not the extremes of heat and cold, and that it be properly ventilated. Scholars should be trained to habits of erect position in their seats and at recitation, and proper attitudes in all their movements in the school-room. It has been painful to notice, in some of our schools, the various swinging, trimming, corkscrew movements of the scholars, and their ungraceful, unnatural positions at recitation. Pupils should be taught to sit well, stand well, and walk well One of our teachers introduced into her school calisthenic exercises with, as we think, beneficial results The spirited execution of these exercises begets prompt action, cheerful feelings, and a return to study with new vigor

READING.—Thorough training in the art of reading is too much neglected in many of our schools. It is not *taught* to any extent, compared with other branches. Scholars are allowed to go through with the exercise as a matter of course, without giving any attention to proper articulation, modulation, expression, or emphasis. The style of reading in some of our schools is hardly respectable. It is difficult sometimes quietly to listen to the careless muttering of what is styled reading To clip the words and disregard the final consonants, and all rules of punctuation, is not reading Many who are old enough to be respectable readers cannot enunciate clearly and unhesitatingly words of five or six syllables. The difficulty arises from not having been sufficiently drilled in the elementary sounds of the language. Those whom we class among our best teachers are frequently deficient in knowledge of those elements. No one can teach others to read who is not a good reader himself; and to become such requires great care and attention Early youth is the time to form correct habits of reading, for then the vocal organs are pliant, and in a condition to be trained at the will of the teacher.

REMARKS BY THE PRINCIPAL OF THE PRESCOTT SCHOOLS.

The people of Prescott seem to be fully alive to the importance of good public schools. And well they may, for where should the schools be nearer to a standard than at the capital of a State or Territory. The patrons are ever desirous of having men on the Board of Trustees who know what a good school is, and when anything is necessary for the comfort of the scholars and more efficient work of the teachers to see that it is procured To this true public spiritedness and liberality we owe our comfortable buildings and grounds, which may well be the pride of the town.

Probably the attendance never has been larger than now. The scholars seem to study for the sake of learning. The great drawback to the school, as is the case with all frontier towns, has been the lack of regularity in attendance But this obstacle is being, to a great extent, overcome

The school is being graded as rapidly as possible, as we firmly believe that in no case is teaching done to so great advantage as when the school is thoroughly graded. By this system a scholar is not limping along with one study a long way in advance of another.

The sooner it is driven out of children's heads that they are sent to school merely to pass the time the better it will be for them, and in place of this they should be made to think that it means work—earnest work to build up a character—not for school days only, but one that will stand in the fierce struggle in after life for right, honor and integrity.

Your obedient servant,
PRESCOTT, ARIZONA. January 23rd, 1883. D. M. MARTIN.

REPORT OF THE PRINCIPAL OF SCHOOLS, TOMBSTONE.

TOMBSTONE, ARIZONA, Dec. 28, 1882.

To the Superintendent of Public Instruction, Prescott, Arizona:

SIR:—In compliance with your request, asking me to prepare an historical review and a statement concerning the educational interests of this city, I would respectfully submit the following:

Scarcely had the first excitement and rush to Tombstone, occasioned by the discovery of her rich mines, subsided, and it became a settled fact that a town had in reality been established, when the necessity of a school became apparent. It was in February of 1880, that, with Messrs. Fickas, Fay and Pomroy as Trustees, Miss Lucas opened the first school in Tombstone, in a little room with a dirt floor and mud roof. Nine was the number of pupils in attendance the first day, which was increased to about forty before the close of the term. Miss Lucas was succeeded by Miss McFarland. The school grew with the growing town. The Trustees began the erection of a school building, 50 feet by 30 feet, which was completed, ready for occupancy, in the latter part of January, 1881. Mrs C. A. Stanton was then engaged as a second teacher, who, with Miss McFarland, taught till July of that year. The number of pupils then reached 128, with a daily average of 83.

In September, with the opening of the school year 1881-2, M. M. Sherman, the present Principal, took charge, Messrs. Drum, Clum and Fouck, composed the School Board. The legacy of a large debt, incurred by the erection of the school building, had been left them. This indebtedness of over $3,000, through the kindness of creditors, they have been enabled to defer paying till the present, keeping the schools open. Two years of forbearance on the part of these creditors is all the virtue that can be asked of them, and the time has now come when they must be paid.

With the beginning of the fall term of 1881 there came the first day 135 pupils The school building, which had been divided into two rooms, was found not of sufficient size to accommodate the increased number of pupils. The hall of the Turn Verein Association was rented, and a third teacher engaged. Soon a fourth teacher was demanded, and the Presbyterian church was secured for another class-room. These buildings were occupied till January, 1882, when a more convenient building of two rooms, erected for the purpose near the school building, was rented by the Board. In the meantime Thanksgiving Day, of the fall term, had been marked by the introduction of patent desks into the building owned by the district. Pupils and teachers had occasion to be indeed thankful for this change from the long benches on which the children had been huddled together

The average attendance of the school year 1881-2 reached 188; whereas 85 had been the largest average of any quarter of the preceding year. This increase cannot be wholly attributed to the natural growth of the city. Several private schools that had been in progress the year before closed, and all the school children attended the public schools.

The school year of 1882-3 began in September, with M. M. Sherman Principal, Mrs. Stanton, Mrs Gaston, and Miss Santee, as assistants; all of whom were teachers of the year preceding. The school was too large for this force, and Mrs. Price was added to the corps as a fifth teacher. Again it was necessary to rent the Turn Verein hall. The enrollment for the four months of this present year has been 276, with a daily average of two hundred and forty pupils. The special attention of the Superintendent is called to this average, bearing in mind that the enrollment covers a period of four months

Though the business men of Tombstone have complained much during the past year of dull times, the school has steadily increased Though in the last sixteen months the school has grown so rapidly—beyond reasonable anticipations—it may be considered a matter of congratulation that any school accommodations at all have been obtained, it is now a question, not so much what can possibly be had, as what we ought to have to properly and decently provide for the school children of Tombstone. The Superintendent will see, from the following statement, in what a poor way this district is for school buildings.

The school building owned by the district is divided into two rooms One of these will seat 33 pupils, and the other 64. This is a good building, well furnished.

Upon this building is an indebtedness of over $3,000. Near this is the rented building before mentioned, divided into two small rooms, 18x20 ft., with no entrance rooms. Into each of these rooms over fifty pupils are crowded. This is rendered possible by the long benches, which occupy the whole body of the rooms, leaving simply narrow aisles at each end Seated at these benches, so that their work is done at great inconvenience, are one hundred pupils of the school. A rental of $840 a year is paid upon this building The Turn Verein hall, the other rented building, occupied by the primary class, is a large, cold structure. At one end the cracks are so wide between the siding boards that one can run a finger through Upon long benches, with the walls for a back, are seated the little primaries. For this building a rental of $40 a month is paid. These buildings are the best that the district has been able to obtain; but this best is very poor. Practically, considering the indebtedness, Tombstone owns no school building, and is unable to rent any that are suitable.

The Superintendent is well aware that the ordinary county and Territorial tax is simply intended to defray the ordinary running expenses of a school. It is not sufficient, nor was it supposed that the fund, thus raised, should erect or furnish buildings. It cannot be made to pay $110 a month rental, as in the Tombstone district, without crippling the school in many other ways. The people of this city are anxious to see their school children decently provided for The School Board composed of Messrs. T J Drum, Benj Goodrich, and A. E. Hartman, just going out of office, have done all in their power, and have the thanks of this entire community. The new Board, about to enter upon their duties, are Messrs. A. E. Hartman, C. S. Clark, and T. F. Hudson. It is believed that they are alive to our necessities, and that, by another year, a far different report can be made concerning the school accommodations of Tombstone.

Great as have been the obstacles with which the teachers have had to contend, for lack of proper schools facilities, I believe that for the thorough advancement of their pupils they have done more than ought to be expected. Although the grade, submitted by the Territorial Board of Education, has been closely followed, each class has been advanced further within a year's time than it contemplated There are six grades in the school, the primary or fifth; the second reader, or fourth; the third reader, or third; the fourth reader, or second; the fifth reader, or first; and the advanced grade. Each grade has a separate teacher except the first and advanced grades, which are taught by the Principal. The advanced grade is prepared for High School work, which it is now doing in part. And here while upon this subject, if I may be permitted to suggest, I believe it would be conducive to the best interests of the cause of Education in this Territory to establish a system of High Schools. As yet Arizona has done nothing in the cause of advanced education.

The States have their Universities and Normal Schools, and so, also, have many of the Territories. To found a University, at all worthy of the name, costs from two to three millions of dollars. Arizona is too poor for that, but as the High School follows the common school, the next step for this Territory to take toward the bettering of its educational interests, is the establishment of a High School system.

Doubtless in the schools of Prescott, Phoenix, and Tucson, as well as in Tombstone, high school work is being done, but some special encouragement should be given. The Common Schools must not be neglected, demanding first attention. If in these places were created specially nurtured High Schools, in connection with their common school system, many students throughout the Territory that are now compelled to go abroad, would find near at hand, under home influences, the higher education sought. I simply present this as a suggestion without any attempt to formulate a measure.

Another suggestion that I would beg to offer, is this: Nearly all of the States have found on entering the Union, set aside for the benefit of their schools, two sections of land in every township.

A great fund was thus created in the aid of education. When Arizona becomes a State, and the time is doubtless not now far distant, no such gift awaits her schools, as the desert character of this Territory renders her school lands practically valueless Congress should make some provision—a direct appropriation of money perhaps—that the schools of Arizona, when she becomes a State, shall at least receive equally with other States of the bounty of the Government.

If the Legislature should remind our worthy Delegate at Washington, and Congress of our needs, it might lead to some good results.

I cannot close this report without speaking of the able corps of teachers, whose names I have already given, by whom I have been assisted in my school work for the past sixteen months in Tombstone. It is a matter of special congratulation that our teachers are as competent as can be found in any school.

I would also mention the names of Messrs. Blynn, Ulmer, and Eccleston, who, by their kindness in deferring the payment of their just claims, have enabled this city to keep its schools open for the usual ten school months each year.

Respectfully submitted,

M. M. Sherman,

Principal Tombstone Public Schools.

Report of the Principal of Schools, Tucson.

Tucson, January 1st, 1883.

Hon. M. H. Sherman,

Superintendent Public Instruction, A. T.

Dear Sir:—I find it very difficult to comply with your request, that I should write a historical sketch of the Public Schools of this city. No records are at hand from which to compile such a sketch. I am thus obliged to rely upon such data as I have been able to collect from "early settlers" which in many instances has been found to be conflicting. Doubtless much will be omitted that should be written, and that which is written may prove inaccurate in many particulars. The first public School of Tucson was taught during the winter of 1869, by Mr. Augustus Brichta who came to this place from Prescott. He says that he was Assistant Clerk of the Legislature, and, in the absence of the Chief Clerk, convened the first assemblage of that body held in this place after the removal of the Capital to Tucson.

After the opening of the Legislature he resigned his clerkship and took charge of the public school which he taught for a period of four months.

During the term he enrolled fifty-five pupils, all Spanish boys. The school was opened in an adobe building near Levin's Park. The school room was 25x40 feet, with dirt roof, a dirt floor, and entirely destitute of furniture aside from rudely constructed pine benches. He found it hard to obtain suitable books. There were no geographies in the school, and the pupils relied solely upon their teacher for a knowledge of the earth beyond their individual horizons. Notwithstanding these difficulties Mr Brichta says the boys learned the English languaage rapidly and became quite proficient in arithmetic, reading and writing

The next session of the public school was opened by John Spring in a building on Meyer Street near the place where the Palace Hotel now stands He taught fifteen months and enrolled 138 boys, 95 per cent of whom were Spanish. The most advanced class read in the second reader.

During the summer of 1872 Mrs. L C. Hughes opened a school for girls in a a house in Levin's Park This school was well attended and accomplished much good.

Mr. Spring is enthusiastic in commending the efforts of Gov. Safford in behalf of the public schools. He says that the Governor was untiring in his efforts to promote its interests, and well deserves to be called "the father of the Public School," not of Tucson only, but of Arizona generally No grander encomium could be bestowed upon any man than this. *He is the father of the public schools*, and, if that distinction be well earned it satisfies the highest ambition of the true philanthropist

It 1873 Miss Harriet Bolton and Miss Maria Wakefield took charge of the school and, during their connection with it, did excellent service.

In the fall of 1874 Prof. W B Horton entered upon the discharge of his duties as principal, with Ignacis Banillas as assistant in the male department. The female department was ably conducted by Miss Packeral who taught one year. She was succeeded by Miss Nesmith who also taught one year. Mrs. Aguirre next took charge of this branch and was followed by Miss Nora Smith and Miss Sallie Wood

Prof. Horton held the position of principal more than six years. To his hands was committed a difficult task, and to properly estimate the value of his work one should understand and appreciate the obstacles and difficulties with which he had to contend in conducting a cosmopolitan school in which there was more or less race prejudice and where, in the minds of certain members of the community at large, there existed an unfavorable opinion of our public system of instruction.

The instability of society, incident to all frontier cities and the rude appliances with which he began his work were further obstacles' Many young men of this city and other places in the territory owe to him all that makes them useful members of society. Six year's faithful service in the schools of a city should entitle a teacher to the gratitude of its people.

In February 1871, the writer and his wife took charge of the school with Prof. M M. Sherman and Miss Nora Smith as assistant teachers. The school was changed from a condition of having separate male and female departments to a mixed school, a course of study was written and the work of grading begun These changes met with some opposition at first, but be it said to the credit of those who opposed, the innovations mentioned, soon gained the approval of all.

The greatest difficulty met with was in the grading of the school. Many who were quite proficient in arithmetic and penmanship could scarcely read English at all. The pupils in the advanced grades of the girls' department were not so proficient as were the boys in the same grade These difficulties and others, too tedious to mention, have been partially surmounted and are still by degrees, being overcome. It is perhaps, not too much to say that the school, as now organized, compares favorably both in discipline and instruction with the best graded institutions of other cities

The number of pupils enrolled during the term ending Dec. 22, 1882, was 350 against 280 enrolled the previous year. Seven teachers are now employed, namely ·

Geo. C. Hall, Principal, Miss E J. Monk, Vice-Principal, Mrs Martha White, Miss L. A Royce, Miss Sallie Wood, Miss Lizzie Borton, Assistants, and Miss Jessie Medbery, teacher of music

This sketch would be incomplete if I did not mention the services of Judge John S. Wood, ex-officio Superintendent, who for eight years has rendered efficient service to the public schools of Pima county. He has done everything in his power to further their interests.

The outlook for the educational interests of Tucson is indeed bright. A new school building is contemplated, and after it shall have been completed, a high school will be organized. Much remains to be done and we propose to make haste slowly but surely toward its attainment.

Respectfully,
GEO. C. HALL,
Principal.

TABLE I. EXHIBIT "A."

Showing the Total Population, the School Population, Average Attendance, Total Number of Teachers, Average Pay of Teachers, and Length of School Year in Days in the Several States and Territories, as reported for the Year 1880.

STATES AND TERRITORIES.	Total Population	School Population.	Enrollment	Average Attendance	Total Number of Teachers.	Average pay of teachers		Length of School Year (in Days)
						Male.	Female.	
Alabama	1,262,505	388,003	179,490	117,978	4,615	$(20	96)	80
Arkansas	802,525	247,547	70,972		1,827	$50 50	$40 00	
California	864,694	215,978	158,765	100,966	3,595	80 26	64 73	146.6
Colorado	194,327	35,566	22,119	12,618	678	42 84	40 87	89
Connecticut	622,700	140,235	119,694	78,421	3,100	56 43	35 45	179.02
Delaware	146,608	35,459	27,823		594	30 83	24 79	158
Florida	269,493	88,677	39,315	27,046	1,095	(40	00)	
Georgia	1,542,180	433,444	236,533	145,190	6,000	50 00	30 00	
Illinois	3,077,871	1,010,851	704,041	431,638	22,255	41 92	31 80	150
Indiana	1,978,301	703,558	511,283	321,659	13,578	37 20	35 20	136
Iowa	1,624,615	586,556	426,057	259,836	21,598	31 16	26 28	148
Kansas	996,096	340,647	231,434	137,667	7,780	32 47	25 98	107
Kentucky	1,648,690	545,161	265,581	193,874	6,764	(21	75)	102
Louisiana	939,946	273,845	68,440	45,626	2,025	(27	50)	118
Maine	648,936	214,656	149,827	103,113	6,934	32 97	21 68	120
Maryland	934,943	330,590	162,431	85,778	3,125	(41	06)	176
Massachusetts	1,783,085	307,321	306,777	233,127	8,595	67 54	30 59	177
Michigan	1,636,937	506,221	362,556	213,898	13,949	37 28	25 73	141
Minnesota	780,773	271,428	180,248	117,161	5,215	35 29	27 52	94
Mississippi	1,131,597	426,689	236,704	156,761	5,569	[30	05)	77.5
Missouri	2,168,380	723,484	476,376	219,132	10,447	35 00	30 00	100
Nebraska	452,402	142,348	92,549	60,156	4,100	36 12	31 92	109
Nevada	62,266	10,594	9,045	5,401	197	101 47	77 00	142.8
New Hampshire	346,991	71,132	64,341	48,966	3,460	34 12	22 23	105.3
New Jersey	1,131,116	330,685	204,961	115,194	3,477	55 82	32 90	192
New York	5,082,871	1,641,173	1,031,593	573,089	30,730	(41	40)	179
North Carolina	1,399,750	459,324	225,606	147,802	4,130	(21	75)	54
Ohio	3,198,062	1,043,320	747,138	476,279	23,684	56 00	39 00	150
Oregon	174,768	59,615	37,533	27,435	1,314	44 19	33 38	89.6
Pennsylvania	4,282,891	1,370,000	937,310	601,627	21,375	32 36	28 42	147
Rhode Island	276,531	52,273	44,780	29,065	1,295	70 24	42 99	184
South Carolina	995,577	228,128	134,072		3,171	25 24	23 89	77
Tennessee	1,542,359	544,862	200,141	191,461	5,954	(26	66)	68
Texas	1,591,749	230,527	186,786		4,361			73
Vermont	332,286	92,831	75,238	48,606	4,326	27 84	17 44	125
Virginia	1,512,565	555,807	220,736	128,404	4,873	29 20	24 65	113
West Virginia	618,457	210,113	142,850	91,704	4,134	(28	19)	99
Wisconsin	1,315,497	483,229	299,258	197,510	10,115	37 14	24 91	162.5
	49,371,340	15,351,875	9,680,403	5,744,188				
Arizona	40,440	7,148	4,212	2,847	101	83 00	70 00	109
Dakota	135,177	12,030	8,042	3,170	286	26 70	21 90	88
District of Columbia	177,624	43,558	26,439	20,637	433	90 16	62 24	193
Idaho	32,610		6,758		160	85 00		
Montana	39,159	7,070	3,970	2,506	161	71 64	56 41	96
New Mexico	119,565	29,312	5,151		147			132
Utah	143,963	40,672	24,326	17,178	517	35 00	22 00	128
Washington	75,116	24,223	14,032	9,585	560	41 14	33 34	87.5
Wyoming	20,789		2,090	1,287	49	(55	94)	

TABLE II. EXHIBIT "B."

Statistics of Public Schools and Others by Government.

STATES.	School Population, 1880.	Estimated Population between 6 and 16 Years of Age, 1879	Enrollment in Public Schools, 1880.	Number of Normal Students, 1880.	Students in Agricultural Colleges.	State Normal Appropriations, 1880.	School Income, 1880.	School Expenditures, 1880.	Income of Agricultural Colleges, 1880.	From Spofford's American Almanac, 1881.	
										Amount of Taxable Property as Assessed, 1880.	Total Amount of State Tax, 1880.
Alabama	388,003	269,320	179,490	330	279	$13,500	$338,013	$375,465	$22,500	$120,000,000	$763,735
Arkansas	247,547	157,734	70,972	139	473	12,000	256,190	238,056	17,500	86,892,441	613,957
California	215,978	180,337	158,765	577	337	33,300	3,573,108	2,864,571		469,645,058	3,153,022
Colorado	35,566	19,825	22,119	9	26		522,580	395,527	12,500	43,072,648	155,506
Connecticut	140,235	115.000	119,694	132	177	12,000	1,481,701	1,408,375	44,007	324,388,923	1,466,263
Delaware	35,459	22,280	27,823		59		183,313	207,281	5,420		134,400
Florida	88,677	42,932	39,315	39			139,710	114,895		29,471,227	250,473
Georgia	433,444	381,203	236,533	78			471 029	471,029		238,934,126	1,092,822
Illinois	1,010,851	667,130	704,041	805	433	42,784	7,836,952	7,531,942	28,298	788,616,394	3,300,000
Indiana	703,558	530,839	511,283	481	195	17,000	4,402,850	4,491,850	24,790	717,796,102	1,670,292

Iowa..............	586,556	369,447	126,057	368	283	6,750	5,254,268	5,621,248	41,000	405,541,397	843,964
Kansas...........	340,647	197,342	231,434	60	175		2,160,507	1,818,387	18,000	160,570,761	883,139
Kentucky.	545,161	385,602	265,581		182		1,031,565	803,490	28,400	345,037,875	1,430,957
Louisiana	273,845	220,620	68,440				480,320	480,320		149,635,805	2,432,188
Maine....	214,656	126,826	149,827	447	102	20,200	1,047,715	1,047,681	8,224	224,579,569	900,000
Maryland, ...	276,120	184,080	162,431	301	75	10,500	1,483,862	1,544,367	7,950	459,187,408	938,463
Massachusetts	307,321	303,836	306,777	1,273	131	58,229	4,622,609	5,156,731	16,200	1,584,356,802	4,950,000
Michigan.	506,221	324,662	362,556	69	144	17,500	3,002,032	3,109,915	33,080	630,000,000	1,153,096
Minnesota	271,428	182,080	180,248	434	386	33,000	1,582,011	1,706,114	44,892	258,055,543	380,906
Mississippi	426,689	226,481	236,704	251	240	5,000	740,036	830,704		106,198,670	444,327
Missouri....... ..	723,484	501,538	476,376	1,388	48	30,000	4,020,860	3,152,178	13,237	529,216,000	2,129,518
Nebraska.	142,348	77,126	92,549	276	9	15,000	1,121,795	1,137,995		90,499,618	907,468
Nevada....... . .	10,592	8,549	9,045				158,947	144,245		29,564,673	252,404
New Hampshire ..	71,132	45,064	64,341	30		5,000	562,116	565,339	7,800	206,959,017	400,000
New Jersey.....	330,685	278,646	204,964	191	44	15,000	1,928,374	1,928,374		606,415,561	820,000
New York........ .	1,641,173	1,019,204	1,031,593	4,113		143,471	10,412,363	10,412,378		2,686,139,133	7,690,416
North Carolina ...	459,324	284,126	225,606	288	171	4,000	399,290	352,882	17,000	142,918,186	533,635
Ohio..............	1,043,320	770,070	747,138	164	60		7,185,420	7,166,963	52,224	1,558,185,965	4.411,725
Oregon	59,615	35,290	37,533		163		303,162	314,017	5,500	46,422,817	324,959
Pennsylvania.	1,200,000	800,000	937,310	3,791	152	52,860	8,046,116	7,449,013			5,392,261
Rhode Island.....	52,273	49,562	44,780	145		10,500	558,451	544,200		328,530,559	388,552
South Carolina..	228,128	228,128	134,072			600	440,110	324,629		120,851,124	715,982
Tennessee..	544,862	343,095	290,141	142	243		799,217	724,862	20,766	213,117,680	626,529
Texas	230,527	347,206	186,786	156	143	21,167	891,235	753,346	19,280	300,525,407	1,396,170
Vermont	92,831	71,886	75,238	396		7,278	417,491	454,285		86,392,534	292,228
Virginia	555,807	307,742	220,736				1,290,288	946,109		319,393,559	2,067,678
West Virginia	210,113	137,415	142,850	346			791,083	716,864	53,500	128,559,927	515,241
Wisconsin.....	483,229	302,158	299,258	1,052	481	51,628	2,697,800	2,230,772	80,000	438,971,801	557,003
Total for States	15,127,405	10,504,382	9,680,403	18,271	5,212	$638,267	$82,684,489	$79,436,399	$622,068		
District of Columbia	43,558	35,948	26,439				476,957	438,567			
	15,170,963	10,540,330	9,706,842	18,271	5,212	$638,267	$83,161,446	$79,874,966	$622,068	$15,101,534,830	$56,379,679
Territories, 1879	136,146		80,310				872,622	864,323			

TABLE III. EXHIBIT "C."

Showing School Age, Expenditure in the year per capita of Pupils Enrolled in the Public Schools, Number of Public Schools, Teachers in Public Schools.

STATES AND TERRITORIES	School Age	Expend. per cap. pupils enrolled public schools.	Number Public Schools	Teachers in Public Schools
Alabama	7–21	$2 08	4,594	4,615
Arkansas	6–21		3,100	1,827
California	5–17	17.17	2,803	3,595
Colorado	6–21	17.80		678
Connecticut	4–16	11.01	1,630	3,100
Delaware	6–21	8.12	561	594
Florida	4–21		1,131	1,095
Georgia	6–18	1.99	5,916	6,000
Illinois	6–21	9.61	11,694	22,255
Indiana	6–21	7.96	9,383	13,578
Iowa	5–21	11 25	11,084	21,598
Kansas	5–21	7.85	5,233	7,780
Kentucky	6–20	3 85		6,764
Louisana	6–18	6.74	1,494	2,025
Maine	4–21	6 53		6,934
Maryland	5–20	8 64	2,300	3,125
Massachusetts	5–15	14 93	5,570	8,595
Michigan	5–20	8.11	6,695	13,949
Minnesota	5–21	8.42	4,064	5,215
Mississippi	5–21	2.70	5,367	5,569
Missouri	6–20		8,641	10,447
Nebraska	5–21	12 29	2,922	4,100
Nevada	6–18			184
New Hampshire	5–21		2,528	3,582
New Jersey	5–18	9.48		3,477
New York	5–21	10 09	20,500	30,730
North Carolina	6–21	1.12	5.503	4,130
Ohio	6–21	8 59	12,043	23,684
Oregon	4–20	8 37	865	1,314
Pennsylvania	6–21		18,386	21,375
Rhode Island	5–15	11 63	924	1,295
South Carolina	6–16	2 42	2,973	3,171
Tennessee	6–21		5,522	5,954
Texas	8–14		6,127	4,361
Vermont	5–20		2,616	4,326
Virginia	5–21	3 82	4,854	4,873
West Virginia	6–21	4.43	3,725	4,134
Wisconsin	4–20	7.51	5,984	10,115
Total			187,005	280,143
Arizona	6–21			101
Dakota	5–21			286
District of Columbia	6–17	14.87	325	433
Idaho	5–21		155	160
Indian			212	196
Montana	4–21		153	161
New Mexico	7–18		138	147
Utah	6–18		373	517
Washington	5–21	8.15	340	560
Wyoming	7–21			49
Total			1,696	2,610
Grand Total			188,701	282,753

TABLE IV. EXHIBIT "D."

Showing Illiteracy in the United States, Census of 1880

States and Territories.	Total Population	Total Population who cannot Read, 10 years of Age and Over.	Percentage of Total Population who cannot Read.	Total Population who cannot Write, 10 yrs of Age and Over	Percentage of Total Population who cannot Write.
The United States	50,155,783	4,923,451	9.82	6,239,958	12.44
Alabama	1,262,505	330,279	29.33	433,447	34.33
Arizona	40,440	5,496	13.59	5,842	14.45
Arkansas	802,525	153,229	19.09	202,015	25.17
California	864,694	48,583	5.62	53,430	6.18
Colorado	194,327	9,321	4.80	10,474	5.39
Connecticut	622,700	20,986	3.37	28.424	4.56
Dakota	135,177	3,094	2.29	4.821	3.57
Delaware	146,608	16,912	11.54	19,414	13.24
District of Columbia	177,624	21,541	12.13	25,778	14.51
Florida	269,493	70,219	26.06	80,183	29.75
Georgia	1,542,180	446,683	28.96	520,416	33.75
Idaho	32,610	1,384	4.24	1,778	5.45
Illinois	3,077,871	96,809	3.15	145,397	4.72
Indiana	1,978,301	70,008	3.54	110,761	5.60
Iowa	1,624,615	28,117	1.73	46,609	2.87
Kansas	996,096	25,503	2.56	39,376	3.96
Kentucky	1,648,690	258,186	15.66	348,392	21.13
Louisiana	939,946	297,312	31.63	318,380	33.87
Maine	648.936	18,181	2.80	22,170	3.42
Maryland	934,943	111,387	11.91	134,488	14.38
Massachusetts	1,783,085	75,635	4.24	92,980	5.21
Michigan	1,636,937	47,112	2.88	63,723	3.89
Minnesota	780,773	20,551	2.63	34,546	4.42
Mississippi	1,131,597	315,612	27.89	373,201	32.98
Missouri	2,168,380	138,818	6.40	208,754	9.63
Montana	39,159	1,530	3.91	1,707	4.36
Nebraska	452,402	7,830	1.73	11,528	2.55
Nevada	62,266	3,703	5.95	4,069	6.53
New Hampshire	346,991	11,982	3.45	14,302	4.12
New Jersey	1,131,116	39,136	3.46	53,249	4.71
New Mexico	119,565	52,994	44.32	57,156	47.80
New York	5,082,871	166,625	3.28	219,600	4.32
North Carolina	1,399,750	367,890	26.28	463,975	33.15
Ohio	3,198,062	86,754	2.71	131,847	4.12
Oregon	174,768	5,376	3.08	7,423	4.25
Pennsylvania	4,282,891	146,138	3.41	228,014	5.32
Rhode Island	276,531	17,456	6.31	24,793	8.97
South Carolina	995,577	321,780	32.32	369,848	37.15
Tennessee	1,542,359	394,385	19.09	410.722	26.63
Texas	1,591,749	256,223	16.10	316,432	19.88
Utah	143,963	4,851	3.37	8,826	6.13
Vermont	332,286	12,993	3.91	15,837	4.77
Virginia	1,512,565	360,495	23.83	430,352	28.45
Washington	75,116	3,191	4.25	3,889	5.18
West Virginia	618,457	52,041	8.41	85,376	13.80
Wisconsin	1,315,497	38,693	2.94	55,558	4.22
Wyoming	20,789	427	2.05	556	2.67